

ASTER Information discovery
INFORMATION DISSEMINATION
Information broker
blindness
INFORMATION
mation bul
INFORMATION

LÁSZLÓ Z. KARVALICS

mation apoc
ATION AR
Informa
formatio

INFORMATORIUM

Word Guide to Contemporary Information Culture

ion commis
fogasm
ATION COM

Informa t

INFORMATION CAPITALISM

Information cascade

Information civilization INFOGANDA

Information clearinghouse

Information abu

TINTA PUBLISHING HOUSE

ACCESSIBIL

Inform

INFORMATION ACTI

Information aesthet

INFORMATORIUM
WORD GUIDE TO CONTEMPORARY
INFORMATION CULTURE

LÁSZLÓ Z. KARVALICS

INFORMATORIUM

Word Guide to Contemporary Information Culture

TINTA PUBLISHING HOUSE



ISBN 978-963-409-237-7

© László Z. Karvalics
Translated by Dávid Kalmár

Contents

Dedication	9
Foreword	11
Introduction	13
Information abundance	27
Information accessibility	29
Information actions/activities	31
Information addiction	33
Information aesthetics, info-aesthetics	35
Information age	37
Information alchemy	39
Information anarchy	41
Information anthropology	43
Information anxiety	45
Information apocalypse	47
Information archaeology	49
Information architecture	51
Information arts	53
Information asphyxiation	55
Information asset	57
Information assurance	59
Information astronomy	61
Information asymmetry	63
Information audit	65
Information avalanche	67
Information avoidance	69
Information awareness	71
Information bazaar	73
Information behaviour	75
Information Black Hole	77
Information blindness	78
Information bomb	80
Information broker	82
Information bubble	84
Information bulimia	86
Information bus	88
Information capitalism	90
Information cascade	92
Information civilization	94
Information clearinghouse	96
Information commissioner	98
Information commodity	100
Information commons	102
Information community	104
Information compensation	106
Information compression	108
Information configuration	110
Information continuum	112
Information costs	114
Information crisis	116
Information culture (Infoculture)	118
Information deficiency	120
Information deficit	122
Information deluge	124
Information demand	125
Information density	127
Information detective	129
Information diarrhea	131
Information diet	132
Information diffusion	134
Information digestion	136
Information disaster	138
Information discovery	140
Disinformation	142
Information dissemination	144
Information distance	146
Information distortion	148
Information diversity	150
Information drought	152
Information dynamics	154
Information ecology	156
Information economy	158
Information ecosystem	160
Information efficiency	162
Information elite	164
Information empire	166
Information engineer	168
Information enthusiast	170
Information entrepreneur, infopreneur	171
Information erudition	173
Information exchange	175
Information explosion	177
Information extraction	179
Information famine	181
Information fatigue	183
Information feudalism	185

Information filtering	187	Informetrics	279
Information float	189	Informology (informatology, informationlogy)	281
Information flow	191	Infornography	283
Information fog	193	Infotainment	285
Information footstep	195	Infotention	287
Information foraging	196	Infowank	289
Information fragmentation	198	Info-window (info-box).	290
Freedom of Information, FOI	200	Information infrastructure	291
Information fusion.	202	Information island	293
Information gain	204	Information jungle.	296
Information games.	206	Information junkie.	298
Information garbage	208	Information ladder.	300
Information gas station	211	Information liberation	302
Information generation	212	Information lifecycle management	304
Information geography	214	Information literacy.	306
Information geometry	215	Information logistics	308
Information glut (information affluence)	216	Information loss.	310
Information governance	218	Information luddite	312
Information group	220	Information Mafia	314
Information headphone	222	Malthusian law of Information	316
Information healing	223	Information management	318
Information heritage	224	Information mapping.	320
Hidden information	226	Information market(place)	322
Information hiding	228	Information maven	324
Information history	230	Information maze	326
Information hoarding	232	Information mess.	328
Information hotspot	234	Information metabolism	330
Information hunger	236	Meta-information	332
Information hunting	238	Information metatheory	334
Imperfect information	240	Misinformation	336
Information implosion.	242	Mode of information	338
Information inequality	244	Information monarchy.	340
Information influence	246	Information monopoly.	341
Infocommunication	248	Information needs	343
Infodump	250	Information neighbourhood	345
Infoganda	252	Information nirvana	347
Infogasm	254	Information nomad	349
Infographics.	255	Information obesity	351
Info-guilt	257	Information ocean	353
Infoholic.	258	Information officer.	355
Infoladies	260	Information omnivore	357
Infomania.	262	Information operation	359
Infomediary	264	Information overload.	360
Infomercial.	266	Paninformationalism.	363
Info-phobia	268	Information panopticon.	365
Info-poor, information poverty.	270	Information Park	367
Informatics.	272	Information partnership	368
Information(al) realism	274	Information patchwork	370
Informational self-determination	275	Information pathologies	372
Informavore, infovore	277	Information pedagogy	374

Perfect information	376	Information socialism	448
Information philosophy	378	Information society	450
Information physics	380	Information space	452
Information pluralism	382	Information spectrum	455
Information poisoning	384	Information sphere (Info-sphere)	457
Information policy	388	Information star	459
Information pollution	390	Information station, Infostation	461
Information power	392	Information statistics	463
Information prison	395	Information strategy	465
Information processing	398	Information style	467
Information proficiency	400	Information superhighway	469
Information property	402	Information superiority	471
Pseudo-information	404	Information systems	472
Information public good	405	Information technology	475
Information quality	407	Information terrorism	477
Information quarantine	409	Information theory	479
Quasi-information	410	Information tidal wave	481
Ragmen of information	412	Information transmission	483
Information ratio	414	Information trap	485
Information receptiveness	415	Information turn	487
Information recycling	417	Information underload	489
Information religion	419	Information universe (Infoverse)	491
Information repository	422	Information utility	494
Information request	424	Information utopia, infotopia	496
Information retrieval	426	Information value chain	498
Information revolutions	428	Information value, Value of Information (VOI)	500
Information richness	430	Information vault	502
Information rights	432	Information visualization	503
Information scarcity	434	Information warehouse	505
Information scent	436	Information warfare	507
Information science/information scientist	438	Information waste	509
Information security and safety	440	Information waterfall	511
Information seeking	442	Information worker	512
Information services	444	Information-centered world view	514
Information shadow	446		
Meaning groups	516		

DEDICATION

The creation of new scientific terminology as well as buzz words in popular culture to define the scientific and social changes that are taking place in our information environment are such that many of us grapple with the definition of terms. This book, intended for librarians, linguists and bibliophiles is also a useful reference for generalists.

Anchored in Popperian logic it also references Zsilka as it explores the differences between the integration of meaning, linguistic change, and virtual, metaphoric and hypothetical meanings. It provides a quick view of the meanings and usage of over 250 words and terms that all contain the word 'information'. Of course these are time-bound and reflect usage as of the end of the second decade of the 21st Century. In this way the book provides a useful reference point for future scholars. This is an exciting field which is particularly prone to neologisms and has a higher than average fluidity in terminologies and usage.

Originally published in Hungarian, the process of its rendition in English allowed the author to probe the complexities of translating fuzzy concepts between languages. As the author explains part of our problem stems from the tendency to bend frameworks used for the analysis and definition of terms in science to new terms of the information society that are multi-disciplinary in nature and use. It is to be hoped that those seeking to translate these terms into their own languages including those in the global research community will find it to be a useful support.

While this is a scholarly work that is well-researched it also allows us to enjoy some terms such as 'infoholics' as well as political insights into the moral panic resulting from 'information anarchy'. It even includes some rather risqué terms from the urban dictionary. Hopefully a thorough reading of this compendium will turn us all into 'information stars'. I look forward to future editions of this book and take this opportunity to congratulate both the author and the UNESCO Commission in Hungary for the quality of the research behind this slim volume. Not only does this work provide a thread to guide us through the information labyrinth it should hopefully inspire others to document the different dimensions of our information age.

Dorothy K. Gordon
Chair of the Intergovernmental Council for UNESCO
Information for All Programme (IFAP)

FOREWORD

Information Culture – Contemporary and Beyond

Rainer E. Zimmermann¹

As we can read in the introduction to this present encyclopaedic work, it is language that possesses the mediating quality between information and meaning, a quality which is permanently progressing (by processing the given contextual references) as well as innovative (by introducing new *topoi* into the context) at the same time. This is why the pure explanatory power of language is soon transcended by entering the region beyond its present scope – both with a view to spatial and temporal extensions, respectively. Paul Ricoeur was one of the earliest protagonists of dealing with this aspect in detail based on a generically hermeneutic theory of metaphors and metonymies.² But even earlier then, Jacques Lacan had established the role of metaphorization within his work on the unconscious referring to this same interplay of metaphors and metonymies.³ These approaches were further discussed in the subsequent works pointing to the interactive conceptual network spanned by the fields of philosophy, literature, psycho-analysis as published by Julia Kristeva, Roland Barthes, Umberto Eco, Michail Bachtin and many others in the sixties through eighties of the last century.

Very much on this line, in this present work, the idea is to compose an inventory of concepts referring to the general concept of information, in the tradition of an “informatarium”, in order to not only cumulate knowledge about the concepts involved, but also give an outlook towards what could be a conceptual frame of extension. With a view to all the different fields of knowledge actually involved, the author can correctly state that “[...] while we must recognize minor and major differences in meaning, there is no doubt that we can identify the shared root of all the diverging meanings: may it be receiving news, teaching, learning, or retrieving data, there is a shift in our heads; the common denominator is the excess that promotes change.” While explaining the procedure applied in this book, the author is stressing the network character of information whose flow is leading into

¹ Lehrgebiet UIG, FB 2 (Informatik), HTW Berlin / Clare Hall, UK – Cambridge

² Paul Ricoeur: *La métaphore vive*. du Seuil, Paris, 1975. (German version: Fink, München, 1986.)

³ Jacques Lacan: *L'instance de la lettre dans l'inconscient ou la raison depuis Freud*. (1957) *Ecrits*, du Seuil, Paris, 1966. (German version: Walter, Olten, Freiburg/Br., 1975, 15-59.)

a “conceptual labyrinth”, as he calls it adequately, important especially because in a labyrinth, different from a maze, we cannot actually get lost, and this is indeed what language achieves: an appropriate orientation within the framework of implicit meanings that enables us to make some of them explicit. The *informatorium* presented here is thus also something that might be capable of decreasing the pressure of conceptual uncertainty, as the author proposes.

Although an endeavour like this one struggles mostly with problems of selection and scope, in this present work, these problems are rectified in an acceptable manner. Some of the items selected may be questionable somewhat as to their relevance (infoholic, infowank, infogasm, infoganda, infophobia), but probably this is an epiphenomenon of the striving for completeness even by encompassing “youthspeak” proper. Other entries take clearly account of more recent developments (information physics, information culture, information geometry) while their exposition is sometimes a little short as compared to the prevalent literature available, but they do indicate new ideas (such as the prevailing background of networks that consist of networks as in the case of the concept of *informatics* – formerly called computer science) and point forward to further work.

Very important entries are those on information philosophy, information society, and information systems: In the latter case it is particularly necessary to differ between essentially different meanings of the concept of system, because in computer and information science itself, it usually refers to something which is not really a system, but its *simulation* (or emulation). While self-organizing (emergent complex) systems are part of the universe altogether (taking the universe as the maximal system after all). Humans who simulate systems are products then of the evolution of these systems in the strict sense.⁴

Even if there might be a number of small reservations (which is possibly always the case for any text whatsoever), this does not at all diminish the outstanding achievements of this present work which provides a long list of consolidated and precisely circumscribed entries that can perfectly serve as both a general overview and a straightforward introduction into the relevant topics. Hence, I think that this present enterprise is not only a successful project in its own right, but also enables the readers to creatively enter the world of language in order to utilize their insight for their own purposes. This book is thus highly recommendable and should be found in a large number of shelves.

4 For a more detailed exposition of both the philosophy of information and information systems see Zimmermann, R.E.; Díaz Nafria, J.M.: Emergence and evolution of meaning: The general definition of information (GDI) revisiting programme—Part I: The progressive perspective: Top-down. *Information* 2012, 3(3), 472–503, as well as Díaz Nafria, J.M.; R.E. Zimmermann: Emergence and the evolution of meaning: The general definition of information (GDI) revisiting programme—Part II: The regressive perspective: Bottom-up. *Information* 2013, 4(2), 240–261.

INTRODUCTION

Contemporary Information Culture in a Conceptual Framework

How to use this irregular word guide?

One of the most wonderful attributes of language is that it is impressively successful and resourceful in following changes in the outside world. Language helps the adaptation of human communities with innovation and the creation of new expressions, and by subtly re-editing the network of meanings, it is able to refer to fresh objects and phenomena with more and more accuracy. Becoming nameable and identifiable with a higher and higher 'resolution' is due to the expanding set of words that are refined into their mutually accepted forms, used in more or less the same meaning in millions of communicative acts. And while inter-connected meanings start to grow and spread in the above-described way, during their use, their effect is beneficial not only for actions and the coordination of actions; as the increasingly complex conceptual space becomes an instrument capable of more than just capturing the world, it helps us understand it. Thus, superseding the current situation becomes possible, and we may take part in higher-level dialogues, even about the characteristics and laws of domains not directly experienced.

Two powerful linguistic facilities make this possible: metaphors and metonymies. A metaphor makes it possible to imagine and recall unknown things that have become important (meaningful) and thus need to be named, by reusing and redefining already known meanings. Most people's eyes open to the fantastic explanatory power of metaphors when they analyse poems at school; they also learn about metonymies, where language creates new connections between clusters in the spiderwebs of language by mobilising possible types of connections or relationships (such as the part-whole relationship, cause-effect relationship, physical similarity, adjacencies that become permanent, etc.). Both have the image in the background, even if it sometimes fades in the steps of being connected into longer and longer chains in the process of continuous reusing. Conscious word creation, i.e. neologism is a creative act, and thus it launches completely new concepts with powerful images. Kind Reader, please taste the phrases 'information footstep', 'information vault', 'information maven' or 'information black hole', and if you have not encountered them previously, try to guess their meaning (without referring to the relevant articles).

Or any other ones. This book-sized collection revolves around a single word: information. This best known, most loaded expression of our age has no mercy: every day, we encounter newborn expressions that are searching for a place in

a universe of words that expands at the speed of (literary) light. And even so, it is almost impossible to follow how reality changes when new words spurt into families of words.

This book was originally written in Hungarian, with numerous suggestions for the adaptation of the lexicon of information culture into the Hungarian terminology. Nothing necessitated keeping the Hungarian references in the English version, therefore we work with less examples, as we did not seek out English language sources to replace the missing Hungarian ones.

Thus our intention is not only to clear up meanings, but also to take a definitive stand regarding the correct understanding of the disputed phenomena of information culture, and to present our reservations and critique where we felt appropriate.

The beginning of using the concept of information: oceans in drops of water

After the word, used as the verb '*informare*' and the noun '*informatio*' had filtered into English from Old French in the early Middle Ages,¹ at least half a dozen spellings competed for centuries (*informatioun*, *informacioun*, *informatyoun*, *informacion*, *informacyon*, *informatiod*).² The 'information' form that later became, and still is, dominant, started to consolidate in its spelling and meaning by the 17th century: it was primarily used to mean 'fact' and 'news' – and these still are the most common meanings in everyday use.

However, in parallel, another development path of 'information', that used to have a legal-inheritance meaning in ancient Rome, also came about. The cultural historian cannot help but notice that by the time the word 'information' made English people think of news, notices, fresh pieces of knowledge, learned people all over Europe had associated it with a type of educational-explanatory handbook, the *Informatorium*. This expression first appeared in the second half of the 15th century, first as a subtitle (*Informatorium sacerdotum*, 1488), but became generally used in the early 17th century (used in multiple fields, the main one being, of course, in theology). It may either be the mediaeval Latin noun *informatior* (teacher, educator) with the noun forming suffix *-ium*, or a neuter gender noun formed from the adjective „*informatorius*” (teacher, educator), as both expressions occur many times in mediaeval manuscripts.

1 Craige, William A.: A Dictionary of the Older Scottish Tongue from the Twelfth Century to the Seventeenth University of Chicago Press, 1931

2 The first known and preserved mention is by Geoffrey Chaucer, from 1386 (*Dame Prudence and hire wise informacions and techynges*). See: Koohang, Alec et al. (Eds.): Knowledge Management: Theoretical Foundations Informing Science Press, 2008:50.

Well-read readers may recall the word from the well-known publication by Comenius (Jan Amos Komensky), *Informatorium maternum*, published in 1633, and we also know that multiple fields of science and practical disciplines (law, public administration) had used Informatoria up to the end of the 19th century.³ This expression is still used today. It is the name of a Czech literary children's magazine (with an educational profile), a university computer centre in Pretoria, and an institution promoting information culture in Szeged. In the Netherlands, the medicine index '*Informatorium Medicamentorum*' has been published since 1971 as a replacement of the previous card index for pharmacists, doctors, and other healthcare professionals. In the educational book typology of Gerd Stein from Germany, Informatorium represents the world of facts and data along with Politicum for the ideological-regulatory side, and Pedagogicum that represents didactic knowledge.

And while we must recognize minor and major differences in meaning, there is no doubt that we can identify the shared root of all the diverging meanings: may it be receiving news, teaching, learning, or retrieving data, there is a shift in our heads; the common denominator is the excess that promotes change.

However, an even deeper sense of meaning may also be identified in every case: something that was previously 'external' becomes 'internal' in the process of formation; the Latin 'in-formatio' is a perfect etymological starting point to see this from.

We may also note that our word progresses almost unnoticed from the world of verballity and primitive literacy into the medium of press and electronic communication, while holding on to multiple layers of meaning. Those who often scout the paths of linguistics may also have noticed that (in the case of Informatorium), the derivative reflects a natural development of meaning, while some of its alternative uses may also be considered personal neologisms, creations of a new word. Following how every Informatorium in the book titles becomes a proper noun from a common noun, but at the same time, because of its frequent use, evolves into the name of a genre of books because of its frequent use, like encyclopaedia, lexicon, or dictionary, again as a common noun, i.e. 'informatorium' – to become a proper noun again as the name of periodicals and institutions.

From the point of view of the philosophy of language and epistemology, it is interesting to notice how derivatives of the same word come to cover different classes of things: certain forms of information, their variations that make it to the physical world, various actors (teacher, student), and types of institutions and activities. And we already are in a more comprehensive, network-like space, where we are not only talking about information, but also their ecosystem: the various,

3 Z. Karvalics, László – Varga, András: Informatorium – az intézménytől a szótörténetig (Informatorium – from institution to etymology) *Tudományos és Műszaki Tájékoztatás* 2010/10 418–423.

interconnected elements of a complex information culture. And this information culture is a vital part of certain societal sub-systems: it has entered politics, law, science, medicine, the world of major organisations, and education – it is present everywhere where action may become more efficient using the ‘excess that promotes change’.

Karl Popper’s famed ‘three worlds’ theory is a good base for rethinking the above. In his theory, the first world is the natural, outside, physical world, the second is the internal world (consciousness, mind, cognitive universe) that makes it possible to capture the first one by giving meaning to whatever we experience from the outside world. In-formatio: from external, internal. Meanings develop, stabilise, and re-form through concepts, and those, through words in the language, following the changes of the outside world. When the complexity of the first world starts to increase, sooner or later the second attempts to follow it: the world of concepts also expands, becomes more complex, detailed, and differentiated. However, this is still subjective knowledge, a subjective model of the world; to each their own. According to Popper, there also is a third world, that of objective knowledge built from the elements of the second. We create structures that did not exist before, that make the subjective into the objective: theories, methods and models, where actions are performed using the arsenal of the second world. It is the industrial science of understanding, with its own way of existence and own laws of nature. An expression has to be more than ‘adequate’ here, unlike in the second world: because of the pursuit of objectivity, accurate, clear, well defined technical terms are needed.

Thus everything that is information-related has more and more at stake. If three network-like, evolving worlds of information were perceived in the 17th century, what should we think about the 21st century? (Read the articles for ‘information society’, ‘information revolution’, and ‘information age’, so that we do not have to describe how to answer this here). In a world where phenomena related to information make up an ever-growing part of the first world, and information culture with all of its requisites reaches everywhere, a huge theoretical apparatus attempts to follow the changes in the second world. These movements between the second and third worlds are very lively, as stakeholders attempt to immediately make knowledge objective.

Simultaneously, the family of information phenomena is not only an object we analyse: the planets of this information universe, words, are also the instruments we use in our analysis. This dual role lends a special significance to not only learning about the first and second worlds in detail, but to also clear up the concepts and organise them in the third world.

Consequently, our word guide is an irregular Informatorium: it attempts to enter all three worlds at the same time.

Information society and the expanding universe of information-related words

Six years ago, I started to collect collocations that contained ‘information’ in some form (usually as a prefix) with my library science major students. We matched the English and the Hungarian expressions. Then we wanted to produce dictionary-like articles, but we soon had to realise that this is not a task for students: appropriate information evaluation skills, context-creating power, expertise in the regions of reality behind the words, and obstinate determination were needed. We have to consider, with due diligence, the meanings distilled from occurrences of the expression in question, investigate the birth of the word, recognize changes in the history of use, measure differences in meaning between synonyms that may be as thin as a single hair, or a lock of hair, and pair expressions that logically belong together, and ones that unveil their meaning when compared to each other.

However, if we approach words with this in mind, every single article grows into a mini-study, as the world generally only used these expressions, but did not consider them subjects of research. Only a number of terms of the third world are an exception to this rule: descriptive terms on the highest level of abstraction themselves became the names of scientific fields. And as these started to define themselves in relation to each other, what is to be classified where, and which questions belong to which scientific field, became the subject of a complex literary debate. At the same time, ‘information’ entered the vocabulary of more and more scientific disciplines as a base category, while its (rival) definitions number more than a thousand. And thus as the base word itself carries a number of possible meanings, this is exponentially true regarding its derivative expressions. In many cases, use is thus inconsistent; it permits individual meanings, multiple alternatives are in use simultaneously. Expressions may be independently ‘rediscovered’ again and again, multiple public figures may believe to have originated the expression without knowing about each other.

Thus knowing and clearing up meanings is important for everyday life (as we live it in an ever more definitive information environment), and in certain professional spheres and scientific fields, as higher-level theories and suitable practice is hardly imaginable without coordination regarding shared ideas of key expressions.

And this deficit seems rather large both in everyday life and in the world of science. Many pieces of research indicate that people do not know the meanings of the most recent IT terms. Many important terms were embraced and shaped by the media or politics. Since the millennium, more and more often, we encounter words that had had clear meanings in their original scientific environments, but since returning to the second world, have lost their contours. Only the reverse is

worse, when users attempt to legitimise an unclear, diffuse meaning by talking about it as an accepted term.⁴

Therefore there is no other way but simultaneous investigation. Wherever it makes sense, and is possible, all three worlds should be considered. Language follows the changes in reality that we are also interested in, in its own, exceptionally flexible and creative way. At the same time, we must reflect upon the words that transfer all this to us with the cold objectivity of the third world. And if these, as scientific terms, are parts of the third world, we must be able to connect to them from above, from the outside, in a critical way, from a meta level. This is why occasionally, words only serve to illustrate the little corners of reality that come into existence (and for this, a Hungarian expression is to be created in order to do this). At other times, we need to own a meaning exactly, in order to see if it reflects reality appropriately, or if it follows its changes. And at yet other times, we must take a stand in scientific discourses in order to make an argument regarding which interpretation of the given concept is correct.

And while we adventure in an information-rich reality, language joins us as a shadow companion. This is because we analyse language itself. On the one hand, we may form an image about how it ‘learns’, how it ‘adapts’, and how it aids understanding. On the other hand, we cannot avoid taking a stand in questions of translation, language use, grammar, or even spelling.

While many methods of our Informatorium may be known from dictionaries, it often serves as a terminological dictionary, as well. It also resembles lexicons: it talks about pieces of knowledge in richly formed textual units. At the same time, it is not encyclopaedic: it does not aim to list every word, to cover every area. Therefore, it is nothing but a word guide that merely supplements vocabulary lists and glossaries that aim for the complete vocabulary of a field.

The aim and the selection criteria of the Word Guide

Some sort of information, in general, is as common as dirt. On the other hand, we only discuss *information something* if we feel that the time has come for the two words to become an idiom instead of chance partners, thus expressing that a piece of reality has become valuable, and by making it possible to name it, we ascend a world. And when the two words become one, resulting in an expression such as *info(some)thing* using the portmanteau method (the first part of ‘information’

4 This is one of the reasons why we only use Wikipedia articles as rarely as possible. Even though there are valuable, useful ones, the details that are important to us (beginnings, early history, versions of meaning) have often proved to be incomplete or inaccurate. English language on-line explanatory dictionaries often provide only minimalistic definitions, often distorting complicated meanings in the process of simplification.

joined with the end of another word), there is no doubt that the maturity necessary for the creation of a new word is attained.

When is an expression ready for word creation? If we used hairs and locks of hair as examples before, we may do so here, as well. It is hard to catch the moment of transition. Which hair must fall out for hair loss to become the beginning of baldness? In one moment, we feel that it is not time yet: we may be right to speak about the sacralisation⁵ of information, but we have no reason to introduce information sacralisation as a new class of meanings. However, information religion has claimed its place (see the relevant article).

However, the birth of an expression with someone already using it in a categorical sense means nothing in itself. Until people start referring to it, until it gets into other text corpora, it must remain hapax legomenon (i.e. as its Greek original that occurs only once: 'read once'). At the sides of the highway of information culture lie the bones of neologisms that had been meant to be used, but had never caught on. There are many more attempts to create new words than there are words that manage to stick in a language. (But this is not to be confused with a change in culture rendering expressions obsolete). However, as we are also interested in the 'first world' captured through language, even an unsuccessful word creation may have an exciting message. Thus we strived to include provocative hapaxes among the articles. Their failures (such as infotention and information headset) have their own reasons, and understanding these reasons may be edifying. Numerous other hapaxes may have become articles, but if we felt there was little to be gained, we did not chose to include them. Naturally, information civilization is included, but we consider another attempt by the originator of the concept, Shumpei Kumon to introduce 'infosocionomist' (information+sociologist+economist) rather forced.⁶ We also do not feel there is much to discuss about 'information greenhouse effect'. As you will see, we do like medical metaphors, but hapaxes such as 'information pain' or 'information therapy' seemed unworthy of our time. There is little wonder that Tim O'Reilly, originator of many neologisms, did not manage to successfully introduce 'infoware' in 1990, constructed to the analogy of hardware and software (brainware, manware, or orgware did not become widespread, either). As the word pair of hardware/software refers to the two inter-conditional sides of the same thing, the physical (tangible) and intangible aspects. Every attempt to create a word that puts a third or fourth one next to these would retroactively render the original meaningless.

We also encounter the issues with catching the transformation when we find multiple diverging new understandings of a general usage word (that are typically

5 O'Callaghan, Sean: Cyberspace and the Sacralization of Information *Heidelberg Journal of Religions on the Internet* 2014/6 90-102.

6 Kumon, Shumpei. 2008. "An Infosocionomist's View." *Journal of SocioInformatics*, 1(1):6-20.

used in distant sub-cultures). In these cases, the smallest differences may appear to be meaningfully different (see for example the two meanings of information poisoning and information patchwork), however, we often classify the slightly differing explanations together as variations, and allocate only one interpretation.

We often excluded expressions that avoided becoming skeletons, but we did not judge them worthy to be the subject of serious analysis. If there is a ‘muffler clinic’ for our cars, should the person solving our information-related issues be an ‘information doctor’? We can imagine someone calling their bit-hunter friend one – but they are just as likely to be called information wizards or information mages (by the way, none of these are hapax legomenons). This expression has stylistic value, but we do not feel that it is worthy of a categoric existence (unlike, for example, information detective). Or we can use information tamer as an example, too: even if they have a dictionary definition (“a person specialised in communicating complicated scientific or IT-related theories in an easy-to-understand way”); only time can decide if it will take root in languages in which, unlike in English, ‘taming a beast’ is not an often used expression.

We collected almost 50 expressions from Urban Dictionary⁷ that are characteristic, existing products of big city slang, but only chose to include two of them (infowank, infogasm); and even these are only meant to demonstrate this magic well that neologisms constantly spring out of. On the other hand, we only excluded infobionics or ‘info-nano-cogno complex’ for a practical reason: they are not derived from the word information, but from informatics.

Often, we also chose to present a word if it was widespread in English, but did not have an equivalent in other languages yet – if they opened an interesting window on some characteristics of the first world, that was reason enough to make suggestions regarding their translation or cultural translation. We felt more of a sense of mission when we could critique a thought, theory, approach, or view that we considered incorrect; this occasionally made us include expressions in the 252 articles that we did not consider worthy by themselves.

We divided the 252 words into 28 categories, so that the areas of reality the given expressions refer to may be visible in groups. We strived to include words from everywhere, and to divide them approximately evenly. The layers of the information base lexicon emerge, special environments for users also appear (from economy to politics and law). Things, actors, actions, and processes separate. We also organised words around families of metaphors. It may be as interesting to start from categories as it is from the alphabet.

We used an innovation that we hope will be considered original for alphabetic search in the book. As almost every article starts with the prefix ‘information’, we based the index on the first letter of the second words, and used colours to highlight them, thus the publication is easy to browse.

⁷ <http://www.urbandictionary.com/>

The nature and construction of articles. Spelling considerations.

In our word guide, we did not allocate different entries for variations with the same root (information work – information worker, information science – information scientist).

In the construction of the definition, we strived for using not only catchy, brief sentences, but accurate descriptions that reflect on every important attribute of the expression. Thus we often do not repeat everything in the detailed analysis.

In the ‘header’ of the article, we list other expressions (if any) that are used in the same or a similar meaning. These may not contain the word ‘information’, or, in other cases, ‘data’ or ‘communication’ may replace information. When we present an expression that has the ‘information something or other’ structure, but not its own article, we provide its English version in parentheses. Antonyms, words with the opposite meaning, may often be indicated, but they are often not meaningful.

We grouped the words into three categories based on whether they are everyday (simply name things in the first world), whether they have professional content and thus belong to the second world, or are scientific terms, and as thus, parts of the third world. We occasionally noticed that they are in movement between the two worlds. Others may be present in multiple worlds, used with different meanings. Still, we attempted to make statements regarding the standing, the situation of the expression in the linguistic system. Thus we encounter words that get stronger, ones that stagnate, and ones that are on their way out.

In the explanatory part of the articles, we listed layers of use, the exact content, the history, the changes in meaning, and the alternative occurrences of the expression, but with considerable differences in construction.

Sometimes the story is very important, so we allocated more space to it – even if first use is not to be found. Where we provided a year, but did not indicate the source, we always used Oxford English Dictionary data. All these are, of course, important in the words of the third world, as the creation of a new term is generally related to an event with a science history important, in the chronological order (historiography) of the given scientific discipline. As earlier documented occurrences than the ones previously known are often encountered, every statement in the articles should be taken as “according to the current state of research”.

Sometimes the fine structure of interpretation seems more important, and sometimes the exact setting of the place occupied as part of a coherent family of words, as compared to the network of related concepts. And finally, in some cases, the ‘Evaluation and recommendations’ part is longish, as our interest lies there: we hope to often point out erroneous uses, confusing interpretations, inconsistencies resulting from the movement between various language registers, or simply a laziness of thought that mixes meanings together. Critiques and recommendations are always subjective, even though they are parts of the third world: they reflect

the point of view of the article's author, that may occasionally be an openly minority viewpoint that is consistently taken for every expression that it may relate to.

We provide references for two reasons: partly for fulfilling the requirement of indicating the source of the reference in question, and partly for offering suggested readings for an even deeper professional study. This is by no means a bibliography, kind Reader, but merely a recommendation, even if we occasionally had managed to choose the most appropriate texts in the literature for this goal.

In the time since we finished the manuscript, multiple expressions that would definitely make it in the next edition have sprung up. If you miss, for example, the expressions 'information landscape', 'information credulity', 'information balance', 'informing science', 'informization', 'information loop', 'information determinism', and 'information order' please consider that we did have to draw the line somewhere. If we manage to create an on-line interface to accompany the book, the expansion of articles may become continuous.

Regarding the conceptual structure of information science: the middle road between tightness and looseness

Let us discuss the third word in a little more detail now.

In our rigorous pursuit of clearing up concepts, that the Reader will often encounter, we are striving to follow some very old forerunners. Father of the "three worlds" theory, Karl Popper himself repeatedly expressed that he was "allergic to hot air", by which he meant terms that were too vague; for example, he was reluctant to say the otherwise accepted compound word "human nature".

Information undoubtedly takes us to a huge "conceptual labyrinth"⁸; even the word itself is a so-called *nomen abstractum*: it exhibits characteristics of verbs and nouns at the same time. It refers to both the action and the effect of the action. Further barricading the ways of the labyrinth that was built to be hard to begin with, as we saw on the example of Informatorium, had started before modern science appeared, but took on an even more unusual size as society, the humanities, and natural sciences started to import and reuse the concept from each other. This is why it sometimes means a preventive mirroring or reality, the copying order of base sequences, or a statistical amount expressed in a base 10 logarithm. However, regarding our word guide, we should not consider the conceptual problems of information itself: the expressions selected for the word guide contain the versions of the word cooked up in the third world cookhouses of physics, mathematics,

⁸ *"As Floridi notes, 'information' is a 'conceptual labyrinth'."* Myburgh, Susan: What the future was: recordkeeping and the paradigm shift it has to have (Draft, 2008) p. 11.
http://www.academia.edu/3571284/What_the_future_was_recordkeeping_and_the_paradigm_shift_it_has_to_have

genetics, biology, etc., in order to let us see the size of the word cloud. But we mostly present occurrences in the first and second words, referring to ordinary weekdays and professional worlds that use information intensively.

This, however, is the world where previous looseness was strengthened by the word magic of media and political communication, and the tabloidising public discourse and tabloidising science initiated a destructive erosion by making the interpretation of concepts alternative in multiple cases, and thus the use of concepts became endless, uncontrolled, unregulated (not to mention inter-cultural differences).

However, definitions by themselves are unable to handle all these, and no amount of explanations may balance a basic concept that is ‘opaque’, transparent, uncertain.

On the other hand, unduly strictness is not necessarily effective, either. At the exams of psychologist Lajos Kardos, students who described the movement of rats in a labyrinth with the phrase ‘took a left turn’ failed the exam. The correct answer would have been that they modified the direction of their locomotion (directional movement). Metaphors always remove us from this type of precision: however, ‘immaculate conceptionalisation’, terms constructed from thin air is not the way to go in most cases, either.⁹

How can we find the middle road between tightness and looseness? This point may be different for each expression. We will find it if the expression is easy to identify, if its meaning may be figured out without previous knowledge. We feel good if the word can handle its own unique nature (*differences* compared to other expressions organised into networks of meaning) and the *similarities*, the shared moments and images that connect the meaning to other meanings.

There is no doubt that in the third world, conceptual uncertainty makes the construction of objective knowledge remarkably hard. Building upon the motto of the recently passed great Hungarian thinker, Elemér Hankiss (1928 – 2005), ‘the age of uncertainty’, we can definitely talk about the Age of Conceptual Uncertainty.

The earlier rhythm of development and change of meanings became horribly complicated when the discourse became multi-channelled. Simultaneously valid every day, scientific, artistic, and spiritual representations of the same region of reality are continuously born, and (at best) these try to mutually reflect on each other, to use or debate each other’s conceptual solutions. But science communication also became multi-channel, partially through by the ever wider communicating vessels of interdisciplinarity, and partially by the way of researcher’s internal-use conceptual innovations reaching other social and language registers as informative or educational content.

⁹ Bryant, Anthony – Raja, Uzma: In the realm of Big Data First Monday, 2014/2 <http://firstmonday.org/article/view/4991/3822>

Because of the widely used, partially folklorised expressions and the huge number of alternative uses per expression, the inability to have discourses grows: more and more researchers dealing with a topic would have to spend more of their time to clear up linguistic-conceptual issues, to critique and to analyse them instead of building the discourse itself. And even though self-purification is one of the defining abilities of languages, they also possess mechanisms that enable it to, in situations that endanger mutual understanding, terminate ambiguities or unnecessary polysemies, however, in the language of science, numerous factors and counter-forces may work against this.

We should also face the price that the scientific community pays at areas stricken by Conceptual Uncertainty:

- new knowledge is created as individual, and not collective effort; forcing researchers into parallel “pocket universes” instead of developing meanings together through discourse
- the chance of interdisciplinary dialogue decreases, as experts consider meanings used in their fields superior, and thus have a hard time approaching the dictionaries of other fields in a discovery-understanding mode,
- neologisms are less about serving as linguistic support of achievements in understandings, and more about letting their owners gain footholds in the scientific attention richness¹⁰
- Worse researcher well-being

The Informatorium may be a good first step to decreasing the pressure of Conceptual Uncertainty.

However, we occasionally return to the collection of words depending on changes of reality, so that we can modify recommendations in its planned on-line version, add new expressions that started to be used, correct eventual errors, and refine deductions and statements.

In parallel, it is more and more timely to start a clearing-up and a classification in the most loaded, similar pieces of the information base vocabulary, often used as prefixes (data, signal, digital, cyber, knowledge).

Afterword

Many years ago, I was searching for an expression to describe an interesting information history feature of early Modern Europe. At that time, such an amount

¹⁰We named this phenomenon the “terminus rodeo” in a shorter article (Z. Karvalics, László: Terminusródeo: Minek nevezzek, digitális bennszülött? (Terminus Rodeo: What to Call You, Digital Native?) It-Business Online Note, 3 November 2011

of changes of meanings were present through diffuse, mysterious information exchange happening through hard to reconstruct, multi-actor channels that it seemed possible to deduct the formation of a number of characteristics of modernity. It was almost by accident that I found the concept of ‘translation’ that science sociologist Bruno Latour used in an analogous communication situation. It seemed fertile and creative, as it is different from the traditional meaning of translation. It is more and less at the same time. It reflects the there-and-back paths meanings take and the changes that happen in the meanwhile. I have not used it again since, it was hapax legomenon in my own texts until now.

However, when I checked who used the word ‘translation’ and what for, I encountered a very exciting world. Geneticists and biochemists use it to describe the process of protein synthesis. It has a huge literature in theology. Physicists use it to describe molecular movement and the movement of solid bodies; this is also useful for geologists when they wish to name a special case of the movement of layers relative to each other. The realisation of how the same word can have an expressive and imagination-empowering power in such varying situations, and behind all the differences, we can still glimpse the general and identical in these made me think back to my university years. It made me recall the experience of Professor of Linguistics János Zsilka (1930-1999) uncovered the differences between integration of meaning, linguistic change, and virtual, metaphoric, and hypothetical meanings (this trinity now also resonates with Popper’s three worlds). And when, rarely, we reach unexpected discoveries, identify patterns of connections that have been hidden before, or are forced to change our beliefs that we had considered stable before during our time spent with worlds, it can be just as beautiful as being let into the colonnades of a previously unknown world of knowledge. This experience is a source of sustained curiosity, of endless, unappeasable interest, to experience this again and again. I am looking forward to seeing how much of this we manage to transplant into the seemingly dry, cold, mechanical empire of articles. Enjoy browsing!

A

Information abundance

~ the unrestricted satisfaction of information needs related to a well-described domain. The necessary information is available in a large amount, in multiple, diverse forms.

Expressions used with the same, or very similar, meaning: information glut, too much information

Antonym(s): lack of information, information quarantine, information black hole

Expressions from related concepts: information pluralism, information flow

Which category? The base meaning, long used in an everyday sense, is starting to enter scientific dictionaries as a definition.

The phrase in the language system is highly loaded, it often appears ad hoc, used instead of other, popular expressions.

After the millennium, the need for a more accurate definition of information abundance, that had often been used before, grew stronger. Instead of the hard-to-capture and inaccurate ‘much’, ‘dense’, and ‘varied’, the important criteria became ‘easily created (by anyone)’, ‘widely distributed’, and ‘cheap or free’ (Bimber, 2003). Others add constant availability by instantaneous presence. Many feel that we have simply entered the age of information economy (Smith, 2015). Verzola (2010) believes that information abundance, in this sense, changes the consumption and creation practices of various information goods (e.g. free software, online music streaming, e-books, etc.). And Bimber (2003) summarises how the structure of politics is re-formed by the abundance of political information. (This is clearly a more comprehensive approach than the simple expectation that a political campaign should be information rich as it is more effective that way).

It would have been surprising if the knights of the attention economy had not attempted to utilise the fact that evolutionary science likes to use the phrase ‘superabundance’ to describe situations where environmental resources are available in such an exaggerated way that the dependence that comes about because of the lack of effort to attain them makes the individual or the population more prone to damage. Information superabundance (Blunden, 2014), means something different, of course: the author uses it to express the same idea as earlier publicists and

researchers of information richness, only that he – understandably – wanted to give the phrase a ‘twist’, so that it stands out more.

EVALUATION AND RECOMMENDATION: in order to explain differences between abundance and richness, we dedicated a separate article to the latter.

References:

- Verzola, R. (2009): 21st-Century Political Economies: Beyond Information Abundance. *International Review of Information Ethics* 10, 53–62.
<http://www.i-r-i-e.net/inhalt/011/011-full.pdf>
- Smith, P. (2015): The New Era of Information Abundance: What Does It Mean for Higher Education? *Trusteeship Magazine* July/Aug.
<http://agb.org/trusteeship/2015/julyaugust/the-newera-of-information-abundance-what-does-it-mean-for-higher>
- Bimber, B. (2003): *Information and American Democracy. Technology in the Evolution of Political Power*. Cambridge University Press.
- Blunden, N. (2014): Finding value in information superabundance. *The Economist Group* May 24.
<http://www.economistgroup.com/marketingunbound/consumers/finding-value-in-information-and-abundance/>

Information accessibility

~ the development and application of devices and technologies that aid with sensory disabilities to access information resources.

Expressions used with the same, or very similar, meaning: infocommunication accessibility, digital accessibility

Expressions from related concepts: information infrastructure, information poverty, information architecture

Which category? Utilisation of a pre-existing concept (making physical spaces accessible to people with reduced mobility) for a special case. It is already considered a technical term in a legal context.

The phrase in the language system is diffusing slowly but steadily.

In an information society, access to information and to information-handling devices is a fundamental human right. People who are unable to communicate in the traditional way as a result of sensory, locomotory, or other disabilities, are no exception to this rule. In the name of equality, information accessibility, i.e. the elimination of their communication disadvantages with the help of modern digital technology using appropriate corrective means, devices, software solutions, and interfaces, along with a consciously used information architecture, is of vital importance.

In recent decades, the development of infocommunications devices has gained such momentum that the development, introduction, and promotion of corrective measures for various types of disabilities have become less and less of a technical challenge. Moreover, society, politics, and various non-governmental organisations also place a greater emphasis on these issues. One of their successes is that the strict legal requirements for public building accessibility are now also applicable to websites. Due to legislation and social collaboration, there are now Braille boards, pictograms, information boards in contrasting colours, sound amplifiers for persons with hearing impairment, and visible, clear signs, messages, and information points easily accessible to persons with motor disabilities – the list could go on.

A functioning information environment must ensure that informative devices for the disabled are easily accessible, and that they are quick and easy to find and/or to use. The various notices, tables, and inscriptions placed at building entrances and next to doors and windows, particularly their height, size, colours and the contrasts between the colours, font types and tactile quality should all be decided upon as the result of reasoned and well-thought-out work, the only goals of which are to represent the interests of people in need, and to make their lives – e.g. enter-

ing or returning to the job market – easier. Since on-line services have taken over a multitude of traditional functions (e.g. administration, shopping, communication) information accessibility is, for the most part, related to Internet use.

EVALUATION AND RECOMMENDATION: In the countries that lead information culture, information accessibility is several steps further ahead than it is in other countries, but the use of the related technologies is getting better and better diffused here, as well. Thus, we may expect the expression to become better known, and used more often.

References:

McVilly, K. (2017) Information accessibility and the right to know *Pursuit*, Sep.28. (The Accessible Information Project at the University of Melbourne)
<https://pursuit.unimelb.edu.au/articles/information-accessibility-and-the-right-to-know>

Information actions/activities

~ the entire spectrum and set of all action types that contains all human activities possibly performed with information.

Expressions used with the same, or very similar, meaning: information operation

Antonym(s): physical action

Expressions from related concepts: information behaviour, information needs

Which category? Almost every use is flashing between a technical term and a name for activities well known from everyday life. The plural version is so much more frequent that it is a good sign that the phrase is given its meaning by referring to all kinds of information activities at the same time: it can also be used for individual information actions, but those all have their individual names.

The phrase in the language system is very diffused, but in many cases, even the scientifically intentioned use is a recollection of the unreflected everyday meaning.

We should spend time considering what the difference between information storage and warehousing is. Whether information processing is a type of information management, or the other way around? How we would define information transfer and information exchange, information consumption and information use compared to each other? Do we need to differentiate between the various types of multiplication, depending on the way the replicas are created, and the number of destinations they reach? How many types of activities and how many “states of matter” of information can there be behind the transmitted information? What type of information activity series can and should be divided into which sections?

Let us think of the following Victorian route. Miss Wilcox is sitting on the balcony reading, and she is startled by the sight of some black birds. She is reminded of her fiancée, whom she had last seen in a dress coat, and when she has arrived in the room, she has already put together a message to him in her head, and she scribbles it on a piece of paper. She goes to the nearby post station, speaks a few words to the watch officer, hands over the written text, and remembers and speaks the address of her future husband. The telegraphist starts to press the buttons on his machine, and sends the morse code messages. Those are received by another telegraphist on the other side who creates the written version, and hands it over to the delivery boy. In the meanwhile, the girl arrives home, and puts the paper with the message into her treasure chest.

Is Miss Wilcox using special contractions knowing the maximum length of a telegraph while attempting to meet the stylistic literary criteria of an information

activity? Is memory reproduction, remembering the postal address an information activity? Wersig and Windel (1985) think of the above and similar questions when they write that information science needs an information action theory and a typology of all possible information activities.

However, from the announced programme, barely anything was realised in 30 years. Studying the theory of information actions is not popular as it is a very complex topic, and as we saw, it is sequential and cyclical; chains of actions are formed by numerous part activity types, and thus, actions may be combined in an almost limitless variety.

Numerous typologies had been made even earlier, the most popular ones in communication sociology and library science (Borko, 1968), but none strived for completeness, only for the classification and listing of activities important to them. This also characterises the classification of Etzel and Thomas (1996), who emphasize the eight most important activities regarding personal information management (PIM). Cox (2013) proved regarding a very narrow information world, photography, how simple social practices can lead to various information activities (and this was way before image sharing and image searches).

EVALUATION AND RECOMMENDATION: Talking about information activities, we take on a general analytic situation, as the systemic level of the idea is the ‘Total’, the ‘Whole’. It should be used with keeping this in mind, in the appropriate problem environment.

References:

- Wersig, G. – Windel, G. (1985): Information science needs a theory of ‘information actions’. *Social Science Information Studies* 5, 11–23.
- Borko, H. (1968): Information science – what is it? *American Documentation*, January, 3–5.
- Etzel, B. – Thomas, P. (1996): The eight key information actions In: *Personal Information Management*. Macmillan, 18–24.
- President’s Committee on International Information Activities (Jackson Committee), 1953.
https://eisenhower.archives.gov/Research/Finding_Aids/pdf/US_Presidents_Committee_on_International_Information_Activities.pdf [2016-04-29]
- Cox, A. M. (2013): Information in social practice: A practice approach to understanding information activities in personal photography. *Journal of Information Science* 39 (1), 61–72.

Information addiction

~ a pathological drive to learn, consume, and collect new information that turns into an addiction and drives out all other aspects of life.

Expressions used with the same, or very similar, meaning: digital addiction, information junkie, information hoarder

Antonym(s): infophobia, information avoidance

Expressions from related concepts: information obesity, too much information, infomania

Which category? An erroneous term created with a mistaken metonymic transfer of meaning, occurring time and again not only in everyday texts, but unfortunately also in ones intended as scientific.

The phrase in the language system is a source of confusion, we believe its demise should be hurried.

New York psychiatrist Ivan Goldberg had created the concept of Internet addiction in a satirical piece of writing in 1995, but to his surprise, the genie managed to escape the bottle. The expression, originally created with sarcastic intent, spread like wildfire among experts working in network culture and Internet psychology. As this coincided with the mass spread of Internet use, in a couple years, it became clear that new terms are indeed necessary, as a new class of addictions had been born: many users became addicts in the medical sense, to an extent that had a profound effect on their everyday lives. First, it was named Internet addiction disorder (IAD), by now, problematic/compulsive Internet use (PIU, CIU) is the most accepted term. Internet overuse, which was popular for a while, gets us away from the clinical world, as what and why is considered ‘too much’ is a highly subjective assessment. And indeed: with the explosive popularisation of the Internet, the number of addicts grew, as many – predominantly young – users developed a pathological relationship with the on-line world in a way that endangered their social contacts, health, and financial standing. A multitude of Internet addiction specialists and clinics focusing on the issue showed up.

However, while Internet addiction is a clear medical term with a widely accepted meaning, the same does not hold true regarding information addiction. The way to the birth of the expression ‘information addiction’ started with a simple transfer of meaning. The iDisorder concept was created by “Psychologist of Technology” Larry Rosen, where the ‘i’ prefix was used to call up the longer ‘information technology’ phrase (IT) – much like other portmanteau words from around the millennium, following the long line of expressions with the ‘e-’ (electronic) prefix. However, much like the Internet, information technology is not informa-

tion itself. They may evoke each other, but they are profoundly different classes of reality. Typical areas of Internet addiction include consumption of various games (specifically on-line games of chance), pornographic content, or a morbid text output made up by posting a huge amount of comments. There is no – or at least, in the pathological sense, there is no or not applicable to speak of – behavioural disorder that would manifest itself specifically in a search for, and consumption of information. Therefore information addiction in the general sense simply makes no sense. Moreover, accepted terms for minor dysfunctions of information behaviour already exist. Compulsive behavioural disorders include manic information gathering (the hoarding of gigabytes and terabytes of data without a goal or later use), and many use the term ‘information junkie’ for information content that is consumed in order to create a good feeling, a ‘high’.

EVALUATION AND RECOMMENDATION: In every moment of our lives, we depend on information that determines our actions; this is information exposure. It is a basic state of being. Illness and addiction are not caused by changes in the relationship to information, but by a series of socio-cultural effects that turn into various behaviours based on the person and their level of traumatising. Pathological dependence does not develop on information, only on carrying out various, typically self-rewarding activities, among which there are ones where there is digitally transmitted information behind the content. However, speaking of information addiction is deceptive, use of the concept is contraindicated.

References:

- Rosen, L. D. et al. (2012): *iDisorder: Understanding Our Obsession with Technology and Overcoming Its Hold On Us*. New York, Palgrave Macmillan.
- Young, K. S. (1997): Internet addiction: symptoms, evaluation, and treatment. In: Vande Creek, J. T.: *Innovation in Clinical Practice*. A Source Book. Sarasota, 17, 19–31.
- Beato, G.: *Internet addiction: What once was parody may soon be diagnosis*
<http://reason.org/news/show/internet-addiction-diagnosis> [2015-09-23]

Information aesthetics, info-aesthetics

1. ~ a developing scientific field that analyses and interprets the assimilation of contemporary culture to the information-rich world.

Expressions used with the same, or very similar, meaning: computer art

Expressions from related concepts: information visualisation, information design, infographics, artistic data visualisation

Which category? A technical term.

The phrase in the language system is still looking for a place in the network of rival concepts.

2. ~ an attempt to utilise quality-based, mathematical-statistical information theory on traditional aesthetic fields.

Expressions from related concepts: content analysis, (artistic) data mining

Which category? A terminological experiment to name an independent field of science – its failure has doomed the concept to oblivion

The phrase in the language system is only present as a historical footnote.

1. Lev Manovich, one of the ‘daredevils’ of contemporary cultural philosophy started using the phrase ‘information aesthetics’ around the millennium, as the science of how contemporary culture reacts to the world that may be described with different measures of information management. What new aesthetic sensitivities and forms of communication does it create, from design through architecture, to designing movie and human-machine interactions? Which will become the radical new techniques of representation, and how may the information mega-sets surpassing human senses be brought down to our level? Can we simplify information to shapes, to make it possible to understand them? But while Manovich’s – bravely stated – ambition is to line out solely the aesthetic characteristic of an information society (this may also be one of the interpretations of the contraction info-aesthetics), his interpretations are loosened when he, in an interview or study, narrows the concept down to the artistic value of graphic information representation, barely diverging from the newest forms of the barely 50-year-old computer art. And while he has many followers, many use Manovich’s fertile concept of information aesthetics, we think it is no accident that his relevant, manifesto-style book has been unfinished for more than 15 years. Just as the point of information society is not ‘much information’, the art and aesthetic of information society cannot be comprehended from this information starting point, either.

2. In the 1950s, German philosopher and publicist Max Bense (1910–1990) attempted to bridge the gap between philosophy, psychology, social sciences, art theory, semiotics, and information theory on a Hegelean basis. He tried to ‘translate’ information-related mathematical measurement models to a new point of view that deepens art analysis. Bense’s information aesthetics found a French follower in the person of Abraham André Moles (1920–1992), who attempted to demonstrate, with a serious scientific arsenal, that order (in the information theory sense) and complexity make people feel warm, and aesthetic content can be related to mathematically definable information characteristics.

And even though researchers and publicists refer to the research of Bense and Moles to this day, the failure of theoretical reflection has banished the concept from the professional discourse. The contradiction between the quantifiable nature of mathematics’ concept of information and the qualitative nature of the everyday concept of information, usable for the interpretation of artistic phenomena, is impossible to bridge. The founders of mathematical information theory clearly knew of this difference, and they never meant to get to the qualitative part. This is why this brave attempt by Bense and Moles was deemed to fail.

EVALUATION AND RECOMMENDATION: as in a number of other cases, the uncritical mixing of the two concepts of information takes the meaning of the same phrase into two very different directions.

References:

- Manovich, L. (2008): *Introduction to Info-Aesthetics*.
<http://manovich.net/content/04-projects/060-introduction-to-info-aesthetics/57-article-2008.pdf> [2015-12-08]
- Manovich, L.: *Info-aesthetics: Information and Form*.
http://manovich.net/content/04-projects/118-info-aesthetics/info_aesthetics.pdf [2015-12-08]
- Information aesthetics Page:
<http://infosthetics.com/> [2015-12-08];
http://monoskop.org/Max_Bense#Information_aesthetics [2015-12-08]
http://monoskop.org/Abraham_Moles [2015-12-08]
- Dartmouth, A. M. (2006): *Materializing New Media: Embodiment in Information Aesthetics* (Interfaces: Studies in Visual Culture), Dartmouth College Press.

Information age

~ the conceptual projection of the viewpoint according to which, the most definitive characteristic of current human civilisation is the revolution of information access and information management.

Expressions used with the same, or very similar, meaning: information society

Antonym(s): industrial age

Expressions from related concepts: computer age, digital age, new media age, digital revolution, knowledge society

Which category? An expression in the colloquial layer of language, the scientific discourse avoids its use.

The phrase in the language system appears increasingly rarely, it is forced out step by step by other names for the era.

As we crawl back through time to earlier and earlier periods, the reason while contemporaries call the age in question the ‘information age’ changes. If it is written down today, it is because of smart devices, the cloud, artificial intelligence, Big Data, and the Internet of Things. Ten years ago, the Internet, 25 years ago, computers were the buzzword.

Few know that the expression itself is even older. It was first used in a 1958 speech by American Senator, and later Vice President, Hubert Humphrey. He calls the new age of science the information age, as the scientific results of earlier eras are always at hand for scientists. Humphrey said what he said for a reason: library and information science had just gone through a massive development, thus it could support research and development directly, and the first direct development programmes related to the future world wide web were aimed at supporting sharing and accessing scientific information – so did the later Internet pioneer Joseph Carl Robnett Licklider who, writing about the libraries of the future in 1959, called those ‘intergalactic computer networks’.

And although the expression itself is nearing its 60th birthday, while the name of the age is still valid today, cultural historians and museologists enjoy taking the history of information age to 200 years ago, to the end of the 18th century, where the concepts of classification, reseau, and the (semaphore) telegraph were born, giving life to the technology and culture of information. This, however, does not mean that the everyday base meaning of information age has started on the way of becoming a technical term.

EVALUATION AND RECOMMENDATION: Science and technology evolve at such a pace that the phrase ‘information age’, that once sounded bombastic, is now not

even in competition with the newer and newer names for ages, from the age of singularity to posthumanism. It is slowly fading from use.

References:

South Kensington Museum, London: „Information age” exhibition

http://www.sciencemuseum.org.uk/visitmuseum/Plan_your_visit/exhibitions/information_age.aspx [2015-04-20]

Information alchemy

~ the science and art of creating valuable knowledge from invaluable raw information.

Expressions used with the same, or very similar, meaning: the DIK model, information ladder, information spectrum, information continuum

Expressions from related concepts: information value, information value chain, knowledge, wisdom, transformation

Which category? Despite a number of attempts, information alchemy did not manage to become an information management term. However, it is very popular as an invented name.

The phrase in the language system is used in a number of meanings in English. In some other languages it is completely unknown.

As mediaeval alchemists attempted to turn worthless raw materials into gold, data and information turn into knowledge in an epiphany experience that results from special transformations.

Since 2012, Mike Eisenberg has been promoting this intense and suggestive image and information alchemy as a word of his own creation in presentations and short professional texts (Eisenberg, 2012). However, 10 years earlier, an interesting volume of scientific studies on university science management had been published with the exact same title (Bernbom, 2000), and two excellent scientists had also attempted to introduce and utilise the phrase about 20 years ago. Thomas Backer (1993) uses it as the magic of knowledge utilisation, while in Gary Marchionini's (1995) work, it is an ability expected from an ideal system of information that is used to re-represent relevant information in the form that is most suitable for use.

The moral of all this is that regardless how ingenious or attractive an expression may be, it may not take root in information science. (After the weak original reception, it appears that even Eisenberg is forgotten.)

We must, however, definitely state that the expression is very fashionable as an invented name. Multiple companies have chosen this as their name (the most famous one is probably British marketing information consulting firm Information Alchemy Ltd). This was the name chosen by British information management experts for a rich collection of resources, the name of a Twitter page that, in the Eisenbergian tradition, examines knowledge constructed from marketing data, not to mention Shirley Keeton's fantastic Pinterest site that demonstrates with visual thinking, or the exciting picture titled 'Information Alchemy' by painter and graphic artist Carson Grubaugh.

EVALUATION AND RECOMMENDATION: The reason that the phrase has no reception in multiple linguistic areas is that ‘alchemy’ sounds more positive and exciting in English than in other languages. Alchemists were, in a sense, the predecessors of modern scientists, yet many consider them to have been tainted with esotericism and fake science, thus expressions containing alchemy have little space available in the attention economy.

References:

- Eisenberg, M. (2012): Information Alchemy: Transforming Data and Information into Knowledge and Wisdom. Március 30.
https://faculty.washington.edu/mbe/Eisenberg_Intro_to_Information%20Alchemy.pdf [2015-11-29]
- Eisenberg, M. (2012): Information Alchemy. (TED-előadás, Augusztus 28.)
<https://www.youtube.com/watch?v=dTpYbvmpm2o>
- Stein, F. (2013): Information Alchemy: The Transmutation of bits and bytes into Knowledge. IBM Big Data & Analytics Hub, Március 6.
<http://www.ibmbigdatahub.com/blog/information-alchemytransmutation-bits-and-bytes-knowledge>
- Backer, T. E. (1993): Information Alchemy: Transforming Information Through Knowledge Utilization. *Journal of the American Society for Information Science*, 4, 217–221.
- Bernbom, G. (szerk) (2000): Information Alchemy: The Art and Science of Knowledge Management. (EDUCAUSE Leadership Strategies), Wiley.
- Marchionini, G. (1995): Information Seeking in Electronic Environments. Cambridge University Press. A szövegben említett Weboldalak:
<http://www.information-alchemy.co.uk/index.htm>;
<https://twitter.com/infoalchemy> ;
<http://hodtech.net/information-alchemy.html>;
<https://www.pinterest.com/ACuriousLife/information-alchemy/>

Information anarchy

~ the lack of regulation or chaos of information processes, the lack of control.

Expressions used with the same, or very similar, meaning: –

Antonym(s): information organisation, information process planning, information democracy, information dictatorship, information management

Expressions from related concepts: information Ludditism

Which category? It is used as a technical term in organisation sociology and economy; in an everyday sense, it can be used to retrace information dysfunction to disorganisation in a stylish way.

The phrase in the language system is rarely used, growing further and further away from its professional meaning.

In the early 2000s, Bernard Liautaud chose to type company information mechanisms using the basic forms of political control. With a little simplification: in information dictatorship, knowledge is concentrated in the hands of a few leaders, in information democracy, it is diffused among a wide range of people, and in information anarchy, mechanisms are not pre-formed, processes are not regulated. All the organisational units of the company possess different pieces of information, and handle them individually, without knowing about each other's data (Liautaud, 2000). This permits the creation of 'information fiefdoms' inside a company – i.e. informal groups that take the previously over-engineered view of IT departments to another, different kind of inefficiency.

A bit later, we find more and more examples of uses that are only slightly similar to the above approach. In 2001, the lack of regulation of a single information moment was enough for people to cry 'information anarchy': after the large number of hacker attacks and security incidents at Microsoft, security consultants and partner companies independently published their data regarding the software errors that made these attacks possible.

In 2002, American comedian A. J. Jacobs called our surroundings 'information anarchy' in an influential book because despite the information glut, we cannot trust what we read, as more and more content is uncontrolled. (Jacobs, 2002). Furthermore, every controversy, error, and dysfunction of the computer-rich world and the Internet is an opportunity for authors to cry anarchy. The editors of the website Literacy 2.0 named 2010 "The Year of Information Anarchy", crediting the lack of control with everything from cyber bullying to a new generation of viruses.

EVALUATION AND RECOMMENDATION: Information anarchy had a unique, well-defined meaning in Liautaud's original professional environment. As the expression was more and more diverted by moral panic, this meaning went out of use. Anarchy is just a 'curse word', a strong turn of phrase for many authors, to be used to judge a state of affairs they find unpleasant.

References:

- Liautaud, B. (2000): *eBusiness Intelligence: Turning Information Into Knowledge Into Profit*. McGraw-Hill.
- Culp, S. (2001): It's Time to End. Information Anarchy.
<http://www.angelfire.com/ky/microsfot/timeToEnd.html>
- Jacobs, A. J. (2002): *The Know-It-All*. Simon & Schuster. A Literacy 2.0. article: 2010: The Year of Information Anarchy.
<http://www.literacy20.com/2011/01/2010-the-year-of-information-anarchy/>

Information anthropology

~ an experiment inside the cultural arm of anthropology, the science of studying the human race (Homo Sapiens), to realise the overall context and to create models by describing and understanding information phenomena and information behaviour.

Expressions used with the same, or very similar, meaning: information behaviour research

Expressions from related concepts: information world-view, information history, information civilization, information philosophy, information turn

Which category? Multiple people have suggested it as a name of their specific scientific approach, but these are independent occurrences that do not reflect on one another.

The phrase in the language system is only present as a number of alternative initiatives.

IS4SI, the International Society for Information Studies held a conference in the Russian capital in May 2013, where participants accepted the “Moscow Declaration”. The fourth chapter of this document reviews multidisciplinary research areas that may become more important in the following years: among the dozen new approaches, information anthropology hides humbly between information aesthetics and information ecology.

Researches who consider their work to be part of information anthropology hold rather different points of view.

According to economic researcher John Dowling, anthropology may help economic science out by conveying information from various sociocultural ranges, thus taking on a kind of hypothesis-testing role. This, according to him, is ‘information anthropology’ (Dowling, 1982).

Strange-fated Danish artist and Nietzsche researcher Inge Houmann (1939–2001) also named her epistemology-based theory ‘information anthropology’ in the mid-eighties (Houmann, 1985). Her starting point was the idea that language is incapable of describing reality (semiotic nihilism), language itself is only part of the obstinately repeating information cycles. The important part is the ontology of information (the basic definition of its existence). Information, in this sense, is the collective human creation of social history; every participant of this singular, multi-millennium adventure polishes, shapes, switches, and forms ideas, meanings, and interpretations.

The Japanese Okuno (2009) has yet another approach, considering the phrase to mean the “anthropology of people of the information age”, the social science

profiling of people who grow up in the new digital environment, and changes of contacting the outside world and inter-family flows, while the Russian Konstantin Kolin considers it to be on a more comprehensive level, the framework of analysing psychosocial changes that are part of the transformation to an information society. A Romanian scientist living in Italy, Cornelia Guja, approaches information anthropology as a more comprehensive scientific subject than any other scientist. She created a comprehensive, cybernetics-based theory that places energy processes in the centre (her own name: biocosmology-based), a central element of which is adaptation realised by information processes (Guja, 2009).

Personally, we would prefer to give all these approaches different names, so that information anthropology may be identified as a new view in cultural anthropology. There have been experiments to define culture itself using information concepts (Jurij Lotman), and to model the spreading of ideas among groups with epidemic models or memetics. Symbolic anthropology, the anthropology of cognition had identified its own models earlier – these have formed the area where an unified description of the world of information phenomena is possible, and it seems to be a promising scientific programme.

EVALUATION AND RECOMMENDATION: Few anthropologists know it, much less accept it as a new ‘branch’ of their science.

However, as the result of the information turn in social sciences, we hope that the concept and the approach it reflects will grow stronger.

References:

A Moscow Declaration:

http://www.kemguki.ru/images/stories/news/2012-2013/2013-05-27/FIS/moscow_declaration_eng.pdf [2016-05-02]

Dowling, J. H. (1982): The Relationship between Anthropology and Economics. *Journal of Economic* 16 (2), 481–484.

Houmann, I. (1985): Informationsspiegelset. In: *The Society of Information* Aarhus University, 1985

Okuno, T. (2009): *An Angle of Information Anthropology*, Iwanami Books Co.Led.

Guja, C. (2009): *Introduction to Informational Anthropology* Edit. Universitara Carol Davila, Bucuresti.

Kolin, K. K. (2011): Information anthropology: next generation and the new threat of psychological stratification of the humanity in the Informational Society. *Vestnik, CHGAKI* 4 (28).

Information anxiety

~ a nervous, disturbing state, a moderate or more severe psychosis caused by the shocking growth of the total mass of information.

Expressions used with the same, or very similar, meaning: content shock

Antonym(s): information junkie, information addiction, information diarrhoea, information obesity

Expressions from related concepts: information overload, attention deficit

Which category? A term that filtered through from social science discourses to everyday language.

The phrase in the language system will remain stably as the concept it refers to is recreated.

Years before the Internet had become a mass cultural interface, in 1989, Richard Saul Wurman warned the world that information overload can lead to the development in psychic symptoms. A new type of anxiety disorders, that are clinically defined and that concerns many, came to be as behaviour can also result from powerlessness because of the

The phenomenon is explained by Wurman by the fact that the knowledge we possess has an inverse relationship with the incomprehensible growth of the amount of information.

The more outside information there is, the less and less important the knowledge in our heads seems. We are unable to decide what is worth knowing or important to know, and what is not: as if there was a black hole between data and our knowledge. And if all this wasn't enough, another reason for anxiety may be an inability to find what we need in the information set that seems infinite.

According to Wurman, the secret to handling the problem lies in planning. We must find a way, systems to use as the basis of searching, and ways of accessing information. We must find ways of access, segmentation, and selection. It is rarely mentioned that Wurman only carried on the earlier concept of library anxiety. Since the early 70s, the any psychic stress of university students in various countries experience when they encounter a library, from the size of the library to anxiety created by "how to start, where may it be" questions. And although library anxiety as its own individual term had only been born in 1986, two years before Wurman, almost two decades worth of research data was available by the time.

All this is, consequently, a strong piece of criticism of Wurman's work. It exposes information anxiety as a comprehensive phenomenon in order to magnify the significance of his own thoughts, while it is well known that it is only experienced by some types of users (employees) in certain situations. On the other hand,

no one ever meets an “immeasurable quantity of outside information”, only a slice of it that may be measured and handled after some familiarisation. The recommended therapy (a better pre-forming of the information environment) is considered an intervention that, regardless of Wurman’s alarm, has been a decades-long, full-fledged developmental practice of the concerned professions. Wurman (and companies that refer to him) offer their own, personalised methodologies instead of or along with this. Therefore, unfortunately, information anxiety and fighting it also became a marketing message.

EVALUATION AND RECOMMENDATION: The exaggerations of Wurman are clear as many of his theses are not valid even in an information ecosystem that grew much larger than the one in 1989. Its theory, in a civilisation critique and cultural philosophy dimension, is close to pseudo-science. The place and adequate use of the concept is found where the phenomenon of information anxiety actually exists: at groups where psychologist and educators working with everyday pathologies actually have a job.

References:

- Wurman, R. S. (1989): *Information Anxiety*. Doubleday, New York.
- Bawden, D. – Robinson, L. (2009): The dark side of information: overload, anxiety and other paradoxes and pathologies. *Journal of Information Science*, 2, 180–191.
- Mellon, C. (1986): *Library anxiety: A grounded theory and its development*. *College & Research Libraries*, 160–165.

Information apocalypse

~ a final information catastrophe that causes the destruction of all mankind.

Expressions used with the same, or very similar, meaning: information catastrophe, information deluge, information cataclysm, information Armageddon, media apocalypse, data apocalypse

Antonym(s): Information Nirvana

Expressions from related concepts: information overload, information power, information civilization

Which category? An everyday expression used haphazardly and occasionally, for dramatic effect.

The phrase in the language system appears randomly, there is literary tradition regarding the expression itself.

In human history, preparing for an anthropogenic (self-caused) end of the world had always had a well-defined reason, may that be moral (divine punishment for our sins), later, in modernity, military-civilisation (we'll destroy ourselves with atom bombs), then ecological-sustainability (we'll eat up all the resources and the future of our planet) causes. It may be somewhat surprising to see publications that find the reason for final destruction in information joining this line.

However, when we look deeper into them, we realise that the authors' pens are driven by pure stylistic anger. We may, of course, discuss obnoxious hordes of bloggers bringing about the end of the age of authoritative experts, and that there is no one left to trust, there is no more information respect (Dusk, 2012). Seeing this as a reason to talk about the final days of our entire civilisation seems like a strong exaggeration, especially considering the earlier experts who proved to be false prophets, and the blogger authorities who do not seem antipathetic at all, rather people who conquer the collective and discursive spaces of knowledge in exciting ways.

And do sponsored advertisements that distort news content, closed networks, shared drives, and the massive amount of e-mails not bring about Judgement Day first (Dillon, 2012)? Is it realistic to talk about a Big Data apocalypse or a media apocalypse (Lewis, 2013)? Can Google head Eric Schmidt be right about social media destroying information self-determination, and thus bringing about the information apocalypse?

The king is naked: we are in the stylistic world of panic creation, where magnifying danger may be the way to popularise some form of protection as a product, sometimes even bidding on the Apocalypse, talking about an information Arma-

geddon or information cataclysm that conjures up the images of destruction with even more intensity.

This aspect is referred to by those who go further in the association, trying to identify the ‘four horsemen of the information apocalypse’. In this case, neglecting previously achieved information rights may lead to the Apocalypse, and the riders are the reasons (terrorists, drug dealers, kidnappers, and paedophiles) that governments use to scare societies into letting them do anything to their private information spheres. The source of this thought is Bruce Schneier.

Naturally, we can validly think about how everyday life is made more and more exposed by digitising, cloud architectures, and connections to artificial intelligence, to the giant system of information that is getting bigger and bigger, and how malfunctions or a huge and irreparable data loss may be realistic scenarios as frailty and vulnerability increase.

We should walk these paths, so that we can think about ways of avoiding these eventualities (as Stauffer, 2015 does in his short booklet). However, we do not need to initiate an extremely exaggerated end-of-the-world discourse in order to do this. (Or – as István Nyári suggests – if we really are at the doorstep of an information cataclysm, we should notice that it also has infinite opportunities for the arts).

EVALUATION AND RECOMMENDATION: An ironic, sarcastic use of the expression may be powerful, but it is not to be taken seriously, as the suggested image of destruction is misleading and exaggerated.

References:

- Lewis, J. (2013): *Global Media Apocalypse: Pleasure, Violence and the Cultural Imaginings of Doom*. Palgrave-McMillan.
- Dillon, S. (2012): Who are the Four Horsemen of the Information Apocalypse? Quora. <https://www.quora.com/Who-are-the-Four-Horsemen-of-the-Information-Apocalypse>
- Editorial: Information Apocalypse – Thinking Man’s Guide to the End of the World. *Dusk Before the Dawn*, 2012. június 29. <http://www.duskbeforethedawn.net/2012/06/informationapocalypse-thinking-mans-guide-to-the-end-of-the-world/>
- Whittaker, Z. (2010): Google CEO’s social media warning; Impending information armageddon? ZDet <http://www.zdnet.com/article/google-ceos-social-media-warning-impending-information-armageddon/>
- Stauffer, E. (2015): *The Information Apocalypse and What You Can Do About It*. Kindle Edition.

Information archaeology

~ the branch of studying the past that attempts to reconstruct one-time information behaviours with the methodology of archaeological research.

Expressions used with the same, or very similar, meaning: cognitive archaeology

Expressions from related concepts: information history, post-process archaeology, cognitive evolution, the history of symbolic shapes, intangible cultural heritage

Which category? Technical term.

The phrase in the language system is embedding slowly.

One of the most exciting developments in archaeology was cognitive archaeology becoming an independent approach in the early 80s. Colin Renfrew and Ian Hodder had laid down the bases of making it possible to tell the story of the evolution of the human mind, extracted from objects in numerous studies and books.

They surpassed the “classic” questions of development history (why did the brain develop? how and why did language develop? where can we find the beginnings of symbolisation?), and they put complex forms of behaviour that had previously been impossible to examine by the methods of archaeology such as decision making, intelligence types, and inter-generational knowledge transfer under the microscope.

The entire programme of information archaeology may be defined as an independent field of cognitive archaeology. The information sphere that is impossible to tear from the workings of the mind may be “separated” methodologically by letting the results of information processing processes gain a material form. Of course, spoken words cannot be reconstructed, but objects and architectural forms that make and manipulate sound can (acoustic archaeology). Signaling activity, may it be visual representation (such as a cave painting), symbols or indexes (such as a one-time landmark), or devices of artificial light creation may be examined with the tools of archaeology. Therefore information history can set out the ambitious goal of drawing up the laws, interrelationships, and “quantums” of early, small communities that may lead to valid statements and working hypotheses regarding cultures that are unavailable because of the lack of other sources that leave few or controversial memories regarding themselves. Its success may mean that it could arrive at the possibility of drawing up states that may not be studied in their complete or partial existence, only by their “imprints” using indirect data, building upon the regularities of information behaviours, with deductions.

However, the above programme can be expanded on further. Every time when an archaeologist reconstructs a meaning or is capable of placing an element of the history of an information object or device in a consequent narration, information archaeology is performed. Olsen and co-authors studied the opportunities how archaeologists have millions of ways to organise the origins and orders of things into a manageable hypothesis by a detailed analysis of their ‘imprints’ in their voluminous book.

Accordingly, reconstruction of the date, birth, changes, and translations of a digital document, i.e. digital tracking is also considered information archaeology.

One possible inspiration for Olsen and co-authors to arrive at such a bold interpretation is the well-known case in which an expert calling himself an information architect, Russ Kirk proved in 2003 that the US Department of Justice published a version of a critical civil rights report redacted to about half the length. Kirk was capable of restoring deleted parts of public texts, and published the reconstructed original document.

EVALUATION AND RECOMMENDATION: Both schools of information archaeology (archaic and ‘digital archaeology’) may have a bright future, even though, as of now, their use is very rare.

References:

- Ojřrnar, B. et al. (2012): *Archaeology: The Discipline of Things*. University of California Press.
 Drenttel W. (2003): *Information Archaeology*. Design Observer.
<http://designobserver.com/feature/information-archaeology/1597/> [2015-12-06]

Information architecture

1. ~ the science and art of structuring and visualising websites, Intranet sites, and any on-line platform (and their backing information systems) that uses organisational, classification, labelling and navigation schemata to facilitate handling and finding information optimised for user experience.

Expressions used with the same, or very similar, meaning: Webdesign

Expressions from related concepts: information aesthetics, information operation

Which category? A technical term used by IT people and programmers in network content management.

The phrase in the language system has diffused, so that the high-level expertise behind the complexity of website creation and the realisation of quality viewpoints may be expressible and easily understandable.

2. ~ filling natural and built environments (outside and inside) with information objects, the physical visualisation of complex, complicated, abstract information content, and the art and science of the realisation of these tasks.

Expressions used with the same, or very similar, meaning: information environment planning, signage, navigation signs

Expressions from related concepts: information history, information objectification

Which category? A term partially of the social history of information, partially of transport planning and building design, but it is not clear and well diffused yet.

The phrase in the language system is known and used by few in this sense, but as, along with the digital information architecture solutions, traditional ones will be, for a long time, present in physical spaces, it is important that this becomes better known; promotion of the expression is necessary for this along with clarifying debate.

1. In 1994, Argus Associates, founded by Joseph Janes and Louis Rosenfeld, started to use architecture-related metaphors, Web Architect and alternatively, Information Architect. The meaning of the conceptual innovation was provided by the surplus that can be used to draw attention to the importance of structural-logical arrangement, structuring, and functionality, as opposed to 'design', that only refers to aesthetic suitability. Since the publication of the standard of the

trend (Morville-Rosenfeld, 1998) this (undoubtedly progressive) approach is popularised not only by professional associations and conferences, but is well diffused in the entire industry that creates websites.

In fact, the concept itself was created a quarter century earlier in the famous Xerox research centre (Palo Alto Research Center, PARC) as a design base for architecture of information technology (Pake 1985).

2. Architect and graphic designer Richard Saul Wurman (1935–) has, since the beginning of his career, addressed the question of how people interact with buildings and traffic in a city environment. What do city planners, utilities and traffic engineers have to pay attention to create the most appropriate information environment for the inhabitants of cities and visitors? He first used the word ‘information architect’ in 1975, but it became well known because of his 1996 book ‘Information Architect’. He introduced his readers to worlds where complex information sets (often portrayed by maps) and clearly, consciously and carefully composed data sets receive new opportunities of presentation.

However, even Wurman only drew attention to a small corner of information architecture in the broader sense. Parallel to the computer and Web interpretation, he emphasized how the aesthetics and order of presentation serve the information function (Resmini-Rosati, 2011). He was right in that an information-rich world really needs specialists who can address both the structural-logical and visual organisation of information. However, in the fight he fought to get accepted as the sole inventor of the concept of information architecture, the fact that information architecture is, in fact, contemporaneous with human signage, with information made into physical objects, got pushed into the background. From those who constructed the ancient border signs, to constructors of the earliest maps (and later, star charts), to signboard designers, the ancient, Middle Age, and modern greats of infographics (information depicted visually), the creators of traffic signs and pictographic systems of symbols, many information architects have blazed the trail for their modern descendants.

EVALUATION AND RECOMMENDATION: In the long term, we are not happy that the Part (the first, Web-related meaning) is better known and better diffused than the Whole (of which website information architecture is actually only a subset). This tension may be handled by giving the first meaning an attribute: not using it in a free-standing way, but in a ‘something (on-line, Web, network, digital) information architecture’ form.

References:

- Morville, P. – Rosenfeld, L. (1998): Information Architecture for the World Wide Web. O'Reilly.
 Pake, G. E. (1998): Research at Xerox PARC: a founder's assessment. IEEE Spectrum 10, 54–61.
 Wurman, R. S. (1996): Information architects. Graphis Inc.
 Resmini, A. – Rosati, L. (2011): A Brief History of Information Architecture. Journal of Information Architecture 2, 33–46.
<http://journalofia.org/volume3/issue2/03-resmini/>

Information arts

~ in artistic reflection, turning to computers, the Internet, and digital technologies as creative environments and media, and/or the appearance of information as an object and as a creative challenge as the topic or inspiration of works.

Expressions used with the same, or very similar, meaning: informatism

Expressions from related concepts: computer art, new media art, digital art, cyberart, data art, conceptual art

Which category? A descriptive art theory base concept.

The phrase in the language system has found its place after some uncertainty, although, lacking knowledge on the history of the concept, it is easily used in an inaccurate or incorrect interpretation.

In 1970, Kynaston McShine organised an exhibition in the New York Museum of Modern Art titled Information. This is the moment to which art history dates the trend-like introduction of information into artistic self-expression and the creative process.

The school, that was first called informatism was born in a peculiar situation. Artworks had existed for at least ten years as the shared ancestors of computer arts, computer graphics, and computer animation (the definitive professional workshops accept Hungarian-American Chuck Csuri as the pioneer). Conceptual art was also born and sprung up in the early 60s (Henry Flint, 1961), in which, the artist replaces traditional physical objects and objectified messages with thoughts and ideas as building blocks and media.

Informatism (later: information arts) is wider-range, than computer arts, but narrower than conceptualism: as information is only one of the possible concepts on their way to artistic utilisation.

At the same time (maybe with the exception of space, the cosmos, and the infinite interstellar space) there is no other concept or object that had undergone a process of enrichment and fulfilment as large as the world of information. New technologies of objectified forms of information and its storage-transmission offered incredible challenges and opportunities, even before the Internet became a mass medium in the mod-90s. Afterwards, Pandora's Box opened for good: if before, letters, stamps, photographs, voting data, and network data could become sources of fine artworks or musical artworks, later, these were result lists of search engines, visually presented versions of huge masses of data, clips, 3-dimension information sets – and many other things.

Artists crunch on the various worlds of data like a bag of chips, and thus, they are changing our ideas on information itself – noticed Tim McKeough in 2007. However, another difference between information arts and their predecessors had become clear even earlier: that it hybridises with science and technology at many intersections. (All this is explained in an almost one-thousand page monograph by Wilson, 2003).

By now, the form ‘information arts’ became accepted and predominant, higher education courses with these names are being offered these days (Conceptual/Information Arts).

EVALUATION AND RECOMMENDATION: It became a comprehensive umbrella category of information arts. Hopefully, it will become part of more and more professional vocabularies even in the short the, and will diffuse with the proper meaning – unlike informatism, for which no single use that matches the accepted meaning has been found (although at least half a dozen creative individual uses and interpretations attempt to position it to a very different place, over arts, to politics and social sciences).

References:

- McKeough, T. (2007): Frame That Spam! Data-Crunching Artists Transform the World of Information. *Wired*, Special Issue, February 29.
http://archive.wired.com/special_multimedia/2008/ff_dataart_1603 [2016-03-26]
 Karamuftuoglu, M. (2006): Information arts and information science: time to unite? *Journal of the American Society for Information Science and Technology* 57 (13), 1780–1793.
 Wilson, S. (2003): *Information Arts: Intersections of Art, Science, and Technology*. The MIT Press.

Information asphyxiation

~ a consequence of consuming too much badly selected information, physiologically reminiscent of asphyxiation caused by too much food.

Expressions used with the same, or very similar, meaning: information obesity, information bulimia

Expressions from related concepts: information eating, information poisoning, information metabolism, information receptiveness

Which category? Although its users occasionally consider it more important, almost a professional term, it actually is only an everyday expression, re-created again and again because its expected stylistic value.

The phrase in the language system cannot grow roots or gain hold, there are random attempts at its repeated use.

An interesting characteristic of the literature of information overload is that various authors, independently of each other, grow the information ‘overfed’ humanity’s swallowing (taking in) and digestion (processing) issues into allegories, interpreting them as illness and dysfunction. Consequently, the phrase is not a fixed term, built in the literary tradition by references, but a linguistic idea re-discovered again and again when authors immerse themselves in the popular visual world of the topic.

Sándor Koch wrote, in a beautiful 2005 essay: „Admittedly or not, we are rushing towards information asphyxiation resulting from the flow of data becoming unprocessable and incomprehensible” (Koch, 2005). From the aspects of “information overload”, William Van Winkle primarily emphasizes that information is ceaselessly received even while we are resting (van Winkle, 2010). The on-line Jargon Database emphasizes that asphyxiation caused by an over-abundance of information leads to incapacity, decision paralysis instead of the ability to make decisions.

Electronic music artists are often characterised by very similar symptoms: for them, information asphyxiation causes a loss of attention and indecision – obstacles appear on the route that should lead from internal content to external, artistic articulation.

EVALUATION AND RECOMMENDATION: Repeated experimenting with the concept reflects the endeavour to create a meaning with a categorical sense before we were able to describe and understand the relevant field of reality in the required depth. Thus, regardless how interesting linguistic ideas occasionally are, and how they may refer to classes of phenomena that had no previous identifying names, they

may be considered hurried experiments. With time, a well-defined phenomenon and a concept looking for a subject may find each other – but in this case, this is not visible yet.

References:

- Jargon Database <http://www.jargondatabase.com/Category/Old-Time-and-Obsolete/Misc-Jargon/Information-Asphyxiation> [2015-01-20]
- Koch S. (2005): Hit és tudomány (In: Pillanat – Ember – Végtelenség. Scientia.
- Winkle, W. V.: Information Overload.
<http://www.gdrc.org/icts/i-overload/infoaload.html> [2010.06.22.]
- Naylor, S. (2012): Information Asphyxiation: procrastination, distraction, and the digital artist. (Toronto Electroacoustic Symposium, August).
http://cec.sonus.ca/econtact/15_2/naylor_infoasphyxiation.html [2010.06.22.]

Information asset

~ a form of capital that may be mobilised and marketed, a resource of companies and organisations. Treated as a unit, it has an amount, a value, a risk, and a lifecycle, recognising this is a world-view challenge, and handling it is a serious management challenge.

Expressions used with the same, or very similar, meaning: data asset, knowledge asset, intellectual capital

Antonym(s): material assets

Expressions from related concepts: information possession, information goods, information economy

Which category? A term in economy science and information management for a new type of assets.

The phrase in the language system generally appears in a professional sense, although because of its strong feel, it is also use in an occasional, everyday way. This, however, is rarely far from scientific.

Although we may speak of information assets for a very long time (at least the professional news traders of the early Middle Ages), the phrase only found its place in the modern organisational information management literature. The turning point may have been the realisation that information produced as a secondary effect of the workflow (for example, car manufacturers' service data, and customer details at companies with many clients) may be partially recycled to improve the quality of production and services, and may partially be considered a new class of goods to sell.

An important part of the asset nature is that it must be considered as a unit as our financial assets for a whole, regardless of it being formed by many small payments. And if it is a fortune, it is also a responsibility: it must be grown, nurtured, and defended, spending time and resources on it.

It became so significant in the life of organisations that in management science, it is severed into numerous specialised sub-fields, so that information assets can be managed by specialised knowledge:

- IAM, Information Asset Management
- SIA, Strategic Information Asset
- IAI, Information Asset Inventory • IAR, Information Asset Register
- IAP, Information Asset Protection • IAS, Information Asset Security

As marketization is a process that is rarely easy to capture and quantify, the phrase is usable to describe a set of information that is clearly valuable even with-

out the market dimension. This is how memory institutions (libraries, museums, archives) can serve as protectors of cultural information assets, and how the idea of national information assets may be considered a category, and used even in narrower fields, i.e. to talk about water resources, meteorological, forestry, etc. information assets.

EVALUATION AND RECOMMENDATION: The phrase is present as a diffused, studied, and well explained term in various fields of economy and leadership science. When it leaves that field in its everyday use, that is OK as well, as the meaning and its small ingredients stay in their place. Its use is recommended, its further diffusion is expected.

References:

What is an Information Asset?

<http://www.informationassetdevelopment.com/what.html> [2015-03-26]

Information assurance

~ a series of measures that aim to protect information and information systems during their creation, processing, storage, transmission, use, and destruction. It is a basic requirement that information systems should always function properly and be accessible only to authorised people.

Expressions used with the same, or very similar, meaning: information security, cyber security, information protection, computer protection

Expressions from related concepts: information management, information fortune

Which category? A high level organising-umbrella term in IT lingo.

The phrase in the language system is only known, in its proper meaning, to the most skilled persons working in IS security, many IT professionals mix it up with information security.

The current cyber security trend is only sensitive to threats from the network, and even though the rate of network connections keeps getting higher, information assurance is a more comprehensive concept, as it includes dangers that are waiting for information outside the network.

Information assurance, however, is a category that represents a view more comprehensive than the basic measures of defence: it is process-oriented, it thinks in governance, and not management, it focuses on prevention, and not forced reactions, and it attempts to exclude all bearers of danger, may they be technical, physical, operational, or personal.

The historical development of information assurance can be traced back to the ancient appearance of methods meant to cover up messages, while the development of its current form (and thus meaning development) can be classified into four well separable stages. After the World Wars and the Korean War, they focused on communication security (COMSEC), and specifically, cryptography. As computer use spread, ensuring the security of information exchanges between computers became necessary (computer defence, COMPUSEC). As it turned out, neither COMSEC, nor COMPUSEC by itself is efficient enough for the protection of information during the entire process of storage, processing, and transmission – thus the protection of information systems (INFOSEC) was born, and then it became, as we saw, information assurance (IA).

Information assurance has five pillars: the protection of the information's accessibility, integrity, authenticity, confidentiality, and non-repudiation. Information assurance is generally composed of a series of defensive measures that mini-

mise the system's vulnerability, identify any attack, and allow for its recovery. Although it mostly focuses on the digital form of information, it does not forget about analogue or physical data, either.

Information assurance is a comprehensive field of science where business, accounting, fraud investigation, psychology, knowledge management, IT systems development, security technology, and criminology skills are combined. One of the most important points of reference of the topic is the RIMAS, the unified reference model of information assurance and information protection, created in a wide-ranging professional consensus. Employing information assurance experts became indispensable for major corporations, governments (e.g. the United States, the United Kingdom), and military organisations. The demand for well-trained experts is massive.

EVALUATION AND RECOMMENDATION: The difference between information security and information assurance is not obvious, explaining and teaching it as part of university training is important for the relevant experts.

References:

- Ascentor: What's the Difference Between Cyber Security and Information Assurance (and does it matter?)
<http://www.ascentor.co.uk/2014/05/difference-cyber-security-information-assurance/> [2015-01-03]
- Cherdantseva, Y. – Hilton, J. (2013): A Reference Model of Information Assurance & Security Eighth International Conference on Availability, Reliability and Security (ARES), 2–6, September, 546–555.
- Florida Tech University Online: Cybersecurity vs. Information Assurance.
http://www.florida_techonline.com/resources/cybersecurity-information-assurance/cyber-security-vs-information-assurance/#.VI_i3tL9BDs [2015-01-03]
- Telos: Cybersecurity isn't the same thing as information assurance.
<http://multimedia.telos.com/blog/cybersecurity-isnt-the-same-thing-as-information-assurance> [2015-01-03]
- The Information Warfare Site: NSA Information Assurance
<http://www.iwar.org.uk/cip/resources/nsa/information-assurance-faq.htm> [2015-01-03]

Information astronomy

~ the question of the suitability of measures used to get to know the expanding material universe to learn about the expanding information universe, which, if successful, results in more efficient operations, a deeper understanding, and the relevant pre-forming.

Expressions used with the same, or very similar, meaning: infonautics

Expressions from related concepts: semantics, semantic Web, information classification, information universe, information communities

Which category? Analogous, experimental conceptual innovation.

The phrase in the language system has not diffused; so far, there is no discourse built upon the initiative, regardless of how ingenious and promising it is. This, however, does not mean that it will not happen later, even if almost 20 years have passed since it was created.

When the excellent information scientist Sándor Darányi was wrestling with the semantic issues of handling ancient texts with computers, he discovered a similarity between astrophysical reconstructions based on the use of beacons sent from the distant past and the philological work based on the reconstruction and interpretation of signs from the distant past (Darányi, 1989). Roaming the space of mythical or shamanic texts (Darányi and Szvetelszky, 1992) is much like an information spacewalk among the stars: infonautics (information+astronautics).

As this textual space (which may only be digitally presented as a three or more dimensional space) is a special case, a further analogy of the thought to the entirety of information space, the information universe which, much like its original, does not only expand, but expands explosively was no big leap.

The search for information objects and finding them is hindered by a number of factors, just like with cosmic objects. The main issues are insufficient (automatic) indexing (the insecurity caused by metadata), the unclarified nature of search engines, and the static nature of navigation “pre-Information Copernicus”. For true three- and four-dimensional navigation, semantic universes that represent the knowledge of the various fields in space have to be created first. This model is capable of describing a continuously changing system of classification in its development. Thus we receive a stable distribution of documents and keywords reminiscent of constellations: if the analogy works, the road to ‘information astronomy’ opens up – this phrase does not exist yet, but is rather promising (Darányi, 1997).

If information astronomy is a path that may be taken, what is not seen through today may be seen through – constellations of digital content may come to life,

and may be travelled with one of the search models. Darányi, using the analogy of immense and ever-expanding astronomical objects (the Solar System, the Milky Way, the Local Group, the Local Supercluster) names the numerous related magnitudes of documents classified together the first, second, and higher levels of morphologies.

EVALUATION AND RECOMMENDATION: Building an entire theory on the simile of the virtuous circle of expansion that started from one tiny point of human cognition and the material world, and introducing a new, enigmatically promising, provocative, and attention-attracting concept did not seem to be a futile effort. We believe the reason why this experiment did not continue was that the analogy, no matter how ingenious it may be, has a limited range. This is because the information universe does not follow the hierarchic morphological order of the Universe (or the Universal Decimal Classification of libraries). Its structure is much more complicated, as a single piece of information may be embedded in numerous structures (we call this characteristic ‘affordance’), and high-level, complex structures do not only expand, but continuously morph, and swap their low-level structures. Furthermore: the information universe experienced as the digital form of all human achievement (Corpus Digitale) is only one, although informative, imprint of the more complex space that is constructed on the information micro-universes (microverses) of single human brains that are, by themselves, more complex than any other dynamic structure that we know. And these basic units form information communities (infinitely diverse, non-hierarchical morphological groups of minds affecting one another). Compared to the infinite complexity of this real information universe, the semantic Web is child’s play.

References:

- Darányi, S. (1989): *Infonautika. Mitológiai kutatás és statisztikai informatika* (PhD-értekezés).
 Darányi, S. – Szvetelszky, Zs. (1992)[*Prolegomena to the Computer Typology of Hungarian Táltos Texts: Report for the Institute of Ethnography, Hungarian Academy of Science*], Budapest.
 Darányi, S. (1997): *Információszolgáltatás az interneten: elmélet és gyakorlat. TMT 44 (7–8).*
http://tmt.omikk.bme.hu/show_news.html?id=2179&issue_id=60 [2016.01.27.]

Information asymmetry

~ an unequal division of available information among market actors on different sides, with the common result that one of the parties receives a benefit compared to the other party.

Expressions used with the same, or very similar, meaning: information benefit, lack of information, imperfect information, partial information

Antonym(s): perfect information situation

Expressions from related concepts: information games, information allowance, full information, information glut

Which category? A term of information economy embedded in game theory.

The phrase in the language system is used solely in economic theory literature.

George Akerlof, Michael Spence, and Joseph E. Stiglitz received the Nobel Prize in Economic Sciences in 2001 for their research regarding information asymmetry. Naturally, base research had started decades earlier, but the spectacular leap in popularity, the explosive diffusion in the use of the phrase is due to its official recognition and the resulting press coverage.

And although in market conditions, the seller, and with public data, the government, is in an information advantage compared to the buyer or the citizen, sometimes the opposite may also be true. Take, for example, an insurance company that does not have enough information regarding a potential client. Due to this insecurity, they offer a healthy and a sick person the same conditions. However, as a consequence, a healthy guest has less of a reason to buy insurance. This is also an example on how the elimination of information asymmetry may be the shared interest of all parties.

In the economy theory literature of the topic, two practical cases are the most discussed: adverse selection and moral risk.

In the case of adverse selection, one participant in a transaction has limited information regarding the subject of the transaction. Adverse selection may, however, be balanced, if the seller or provider provides high-quality products and services, and trust increases due to the consumer's positive experience. With the increase of trust and demonstrable references, the seller can increase the price of products of services offered. The seller can increase the security of the customer by offering warranty or guarantee documents.

And finally, authority-prescribed and controlled standards and certificates (e.g. stars for hotels and motels, or the classification of chain restaurants) may also serve as an appropriate balance.

Moral hazard is when the burden of risk is borne by only one of the parties. In these cases, the risk is that only the party in the disadvantaged information situation gets damaged due to the failed business economy and business processes after the agreement is made. In the case of moral risk, it is not the subject of the transaction, but the activity of one of the parties that is hidden from the other party.

There also is an information asymmetry in the health care service market between the service provider (the doctor) and the patient. As the Hungarian Health-care Glossary explains in the language of economy: “in the end, resource allocation is generally realised by decisions made at doctor-patient encounters, and one of the patient’s most important expectations regarding the doctor is information provision”.

EVALUATION AND RECOMMENDATION: The basic structure of information asymmetry is under constant pressure from the expansion of the information universe. New forms and channels of growth and decrease appear constantly. Opposing parties fight information games. Numerous new developments arose (e.g., employers can legally ‘investigate’ employees on-line, and this data can be used when choosing applicants for a job), thus use of the phrase in the following years may not only become more generalised, but deeper, as well.

References:

Aboody, David; Lev, Baruch (2000). “Information Asymmetry, R&D, and Insider Gains”. *Journal of Finance*. 55 (6): 2747–2766

Information audit

~ a systemic examination of the use, sources, and flow of information that experts perform on persons and documents in order to determine how much the examined factors add to realisation of the organisation goals.

Expressions used with the same, or very similar, meaning: IT-audit, information system audit, knowledge audit

Expressions from related concepts: information management, information government, information efficiency

Which category? A technical term that appeared in the dictionaries of company libraries and information management consulting companies at more or less the same time to refer to a new class of the auditing activity that had already been well known and widely used.

The phrase in the language system is virtually unknown outside the circle of people who utilise, offer, and perform audit services.

Audits are an examination, vetting, and quality assurance process that is widely used in the company-organisation world, generally performed by an outside actor, that compares system, product, or process compliance expectations and regulations.

The necessity of information audits became clear in the mid-Nineties, as information systems and processes became bigger, more complex, and gained more and more important roles in the organisation's life. (And naturally, where the product is an information product). This kind of audit is never self-serving: the uncovered result is always the origin point of some change, reconstruction, or re-making. Where information deficiency, information parallels, information obsolescence, delay, distortion, or the insufficiency of any component is identified, there is a direct route to redesign and rebuild the systems. The following questions must be answered by the end of the process: "What is the role of information and knowledge in our organisation? Do we have further relevant goals? What do we need to realise these goals? What information must we collect to enrich our knowledge? Who should be responsible for this difficult task? Which areas must co-operate for success? Do we need to insert new methods into our processes? How can we change company culture in order to reach our goals?"

Naturally, organisations always resist change. As the result of the audit process, the concerned organisations typically aim to manage their information resources better, and the audit will generally be followed by development of a new information strategy or the creation of an updated information management plan.

EVALUATION AND RECOMMENDATION: In the literature of information science and company information management, it is more and more considered part of the theoretical base. The information audit itself is typically only used in the most information-conscious organisations, therefore it is interesting that it managed to get into even the glossary of sports science.

References:

- Buchanan, S. – Gibb, F. (1998): The Information Audit: An Integrated Strategic Approach. *International Journal of Information Management* 18 (1), 29–47.
- Henczel, S. (2000): The information audit as a first step towards effective knowledge management: an opportunity for the special librarian. *International Journal of Special Libraries* 34 (3/4), 210–226.

Information avalanche

~ the mass of news, data, knowledge, images, and other electronic content, that buries us if we do not take preventive action.

Expressions used with the same, or very similar, meaning: information flow, information tsunami, information overload

Antonym(s): information avoidance, lack of information

Expressions from related concepts: information glut, information ocean, information foraging, information bubble

Which category? An everyday turn of speech, mostly used for sheer stylistic value instead of other, overloaded expressions.

The phrase in the language system is very popular, but it is still searching for its place as a special expression.

The information avalanche was a popular metaphor even in the seventies to reflect the danger increasing because of the growing mass of information. The image that called upon numerous attributes of the moments before an avalanche was a successful conceptual innovation, but it was ousted by even stronger and more intense expressions (information tidal wave, information flood, and finally, information overload). The paradox is that these metaphors imply that we already are in the avalanche, it has already covered us. The original interpretation that gave the expression its meaning is gone completely, and its current use is mostly limited to breaking the monotony if information explosions and information floods get too much. And as thus it has no characteristic individual meaning, the expression's common expansion is no help: how to survive, handle, rule, or heal (!) the information avalanche, or how to dig ourselves out of it once it has covered us.

However, a number of publicists and analysts feel that using the expression is pointless if it does not return something special from the original associations of the original avalanche.

Therefore, creatively, attempts are being made to utilise it for various unique situations where the 'smaller to bigger' modality is present. For example, in the sense of being able to amass larger and larger pools around tiny topics. Or the ceaseless feedback loop: the more useful information appears on the network, the more interested parties join in the system. Some believe that information avalanche describes well the sad phenomenon of scientific sites being covered, to an extent that makes finding them hard, by secondary, dubious websites given better places by imperfect search engines.

Dan Gilmore (2004) may have come up with the most ingenious interpretation; he advises company communicators, who generally react badly, how to avoid the

situation where an unpleasant subject that comes up at an irrelevant forum or blog turns into a fearsome information avalanche in on-line press exactly because of their actions. And as this phenomenon is rather unique, and we often encounter similar events (for both politicians and celebrities), it is possible that the expression will consolidate in this direction.

EVALUATION AND RECOMMENDATION: Almost all users of the expression chose it as a synonym of more popular phrases. A search for an individual unique meaning has started on multiple paths, let's hope that the word will soon only be used for one, well-defined phenomenon.

References:

Key science Web sites buried in information avalanche, EurekAlert, 2007. March 22.

http://www.eurekalert.org/pub_releases/2007-03/esr-ksw031907.php [2015-03-26]

Gillmor, D. (2004): We the Media. Grassroots journalism by the people for the people, O'Reilly.

Information avoidance

~ a natural, everyday form of information behaviour that avoids facing undesired information with various strategies. In its pathological form, information anxiety is so strong that it can only be alleviated by avoiding information.

Expressions used with the same, or very similar, meaning: information blindness, information diet, infophobia

Antonym(s): information hunt, information search, information junkie, information addiction

Expressions from related concepts: information obesity, information anxiety, information overload

Which category? In behavioural psychology, it is a well-defined technical term for the description of a form of behaviour. Its colloquial use is destructive.

The phrase in the language system is rarely used.

Researchers of behavioural psychology proved, by detailed research, that information avoidance is a generally used personal strategy in everyday life with active, passive, and defensive variant behaviours. Its goal and reason is to delay or prevent the potentially adverse effect of unwanted information on personality (Sweeny, 2010). The sensitive topics are primarily related to health, religion, and politics, but surprisingly, it is also present in the fabric of personal relationships (Narayan, 2011).

It is no surprise that the panic literature of information overload removed it from this context, and placed it among pathological behavioural disorders that come about as a result of anxiety developed because of too much information (Bawden, 2009). This is a serious mistake, because information avoidance always refers to a certain piece of information with a personal meaning, yet imported into the panic literature, this moment fades away, and it starts to refer to avoiding all information. However, no real person behaves like this, or at least, this only occurs in extraordinary cases.

That is because information diet, i.e. a conscious reduction of our information environment, is not part of the phenomenon of avoidance.

EVALUATION AND RECOMMENDATION: Information avoidance has a clear place in the vocabulary of behavioural psychology; it covers the domain of reality that it refers to excellently. Its classification as an information pathology is erroneous, we have to strive to make this recent use disappear from the public discourse.

References:

- Sweeny, K. et al. (2010): Information avoidance: Who, what, when, and why. *Review of General Psychology* 4, 340–353.
- Narayan, B. et al. (2011): The role of information avoidance in everyday-life information behaviors. In: *Proceedings of the 74th ASIS&T Annual Meeting, ASIST, New Orleans Marriott*.
- Bawden, D. – Robinson, L. (2009): The dark side of information: overload, anxiety and other paradoxes and pathologies. *Journal of Information Science* 2, 180–191.

Information awareness

~ recognising and understanding the role of information processes in shaping the future, and planning action in order to reach desired changes.

Expressions used with the same, or very similar, meaning: information sensitivity

Antonym(s): being anti-information

Expressions from related concepts: information-centeredness, information governance

Which category? It is heading for a better defined professional interpretation from everyday occurrences.

The phrase in the language system rarely exists the narrow circle in which it is used. For example, it has not diffused in the language of the press at all.

Awareness became a popular term in the English language political discourse. Public awareness means more of a conscience of danger, that various social groups can be prepared to receive potential dangers. Around the Millennium, awareness in this sense was more and more described as a sensitivity for chances and opportunities offered by the future, in strategic planning issues. It is no wonder that with the breakthrough of the Internet and digital culture, those who saw the information challenge as danger or an opportunity, and adjusted their thinking or behaviour planning accordingly, called the approach and mental origin point that may be typified, improved, and on municipal or governmental arenas, often even prescribed as a norm.

Information awareness is different for the citizen and for the governments.

As users, every information action has consequences that one has to know. It is important to recognise that the information footsteps we leave behind can be the source of danger. On the other hand, the ones who can best adapt to the world dominated by information culture are the ones who can prepare for future changes and best conform, in the best rhythm.

Information awareness can also characterise government work in many ways. Programs must be created and resources allocated to the information-based development of the future, in good knowledge that these same systems are also the sources of innumerable threats and vulnerabilities. When the US government created the Information Awareness Office (IAO) after the September 11 attacks, than in 2003, announced its militant and controversial “Total Information Awareness (TIA)” programme, it unilaterally narrowed the phrase down to information operations that provide better defence against the threat of terror – in practice,

a never-before-seen expansion of wire-tapping and information flows. And although the initiative did not pass Congress, later developments proved that the wire-tapping capacity was still created (even by violating citizens' information rights).

EVALUATION AND RECOMMENDATION: the danger discourse that results in the loudest and most controversial debate appears to overshadow the realisation that matching economy, science, and public education to the challenges of the information age is an issue of basic competitiveness. Therefore it is important to emphasize and pay attention to both senses of the concept.

References:

http://rationalwiki.org/wiki/Information_Awareness_Office [2015-11-26]

B

Information bazaar

~ the on-line information marketplace that suddenly became confusing, where many new sellers and products appeared at the same time, and what's more, by now, the use of personal data collected by various applications gives the seller an edge against the exposed user who cannot glimpse into the "workshop".

Expressions used with the same, or very similar, meaning: information market, information supply

Expressions from related concepts: information bubble, information trap

Which category? An everyday expression with a high stylistic value.

The phrase in the language system has not diffused, few know it, and there barely are any examples of its use in other languages.

In the mid-1990s, the whole world was taken by surprise by a huge global information infrastructure that was built above the previous isolated, but transparent and knowable information systems. Compared to the habitual, organised information 'miniworlds', everything suddenly seemed like a bustling market in an unknown city, full of salespeople speaking unknown languages. First, the 'global information bazaar' was used to express this change, then suddenly, everyone realised that moving paper-based information to the electronic space is, by itself, a huge challenge, and thus, after a while, they started talking about the 'digital information bazaar'. The feeling of disturbing strangeness then left the word, but the infinite, confusing selection of information stayed: "the Internet is not an unquestionable warehouse of knowledge, but an information bazaar, where everyone can find everything to support their own point of view".

It is interesting to see how close we get to the last station of the change of meaning with this interpretation, where people don't build their own information bubbles, but emerging actors of the networked world create new surfaces for advertisers by harvesting and analysing information on social media sites.

It is no accident that the expression 'information bazaar' is primarily used today by consumer society expert Bernadette Kamleitner and her research group to publish their results. They, and people that refer to their work, underline that advertisement modules integrated into smartphone applications give more ad-

vantage to sellers than ever before, while users neither know the value of their personal data, nor control the legality of handling the information on them.

EVALUATION AND RECOMMENDATION: The expression is not expected to turn into a strong term, even though it has started to seep into scientific publications from the professional language.

References:

- John, N. (1996): Internet Ready for Prime Time or Welcome to the Global Information Bazaar! (Summary of an 1995 lecture, Biblos)
<http://www.bcu-iasi.ro/docs/biblos/biblos4/wel.pdf> [2016-04-24]
- Allison, P. (2003): Finding Our Way In A Digital Information Bazaar. Library of University of Connecticut, September/October
http://digitalcommons.uconn.edu/cgi/viewcontentcgi?article=1028&context=libr_news
- Kamleitner, B. et al. (2013): Information bazaar: a contextual evaluation. HotPlanet, 13 Proceedings of the 5th ACM workshop on HotPlanet, ACM, New York, 57–62.

Information behaviour

~ optimisation of the relationship with the environment through correctly chosen actions.

Expressions used with the same, or very similar, meaning: information actions/activities, information operations, information management

Antonym(s): physical action

Expressions from related concepts: information ecology, information search, information processing

Which category? Representatives of multiple scientific fields use the phrase as a strong term, but its use is weighed down by the insecurity of the concept.

The phrase in the language system became very loaded in the last quarter century.

The history of the concept of information behaviour mirrors the difficulty of interpretation excellently.

Regardless of how many definitions we find – a thematic book lists 70 (!) different theories (Fisher, 2005) – it is hard to use them as long as we are not clear about the nature of the triple pressure on the phrase.

1. The shattered disciplinary background leads to conceptual insecurity. In the early 20th century, psychologists, in the middle, library and information science experts (Case, 2012), while after the Millennium, new media theoreticians discovered the phrase for themselves, only considering the characteristic types of information behaviour that are significant from their viewpoint.

Accordingly, the entire meaning of the concept was never subject to study (Wilson, 2000), which would have contained all active and passive connection types of the information side (channels, sources, versions, and carried meaning types) and the human side (all information management abilities manifesting in activities), and the even more comprehensive context in which all this may be interpreted. Instead, information sub-activities were put under the microscope, and the situation was not alleviated by the appearance of the second-grade formulae of information seeking behaviour and information use behaviour.

2. The environment that information behaviour reflects upon has, step by step (and from the early 90s, at an accelerating pace) become an information-intensive environment. We know from the history of information architecture that from the first border stones, we have enriched our environment with more and more objectified information objects. Information revolutions replaced objects with smaller information ecosystems, that vastly increased the quantity of information management activities, and their ratio within all activities. The high-speed

digital revolution of our age makes it possible to perform more and more activities as information actions, in a mediatised way, that previously would have had to be performed as physical actions. Manovich's (2012) immensely popular post media aesthetics, in which information behaviour plays a central role reflects on this situation (narrowing it down to information processing in an expanded sense and data collection strategies).

3. The 'information behaviour' formula implies that 'information' is a sub-class of behaviour, as opposed to the physical side, e.g. reproductive behaviour, mechanical work, and foraging and food consumption. The problem with this is that every information activity is also a physical activity that has an energy balance and a material nature. On the other hand, every physical activity is made up of sequences formed from a series of actions, and they do not work without information stages at all. Communication and a complex exchange of signals precedes reproduction, for the work, previous knowledge, goals, practices, and information coordination is needed for all partial actions, foraging is preceded by planning, and numerous pieces of background information must be activated every time for the processes to run successfully. 'Behaviour' is not point-like, but cyclical/sequential, with long, interconnected chains, in which information and physical moments mix. The theory of information behaviour is incapable of capturing this in any way, therefore the validity of its statements is necessarily limited.

EVALUATION AND RECOMMENDATION: The highest systemic level, the evolution context lends its meaning to the concept of information behaviour (Spink, 2010). In the early history of living systems, physical and chemical regulation forms the movements and behaviour of primitive beings in contact with their environments. Involving information, the appearance of information management abilities and forming into an activity, and later, the evolution of complex neurological actions are an evolutionary innovation. They appear at a certain point, and become an extraordinarily effective survival technique, creating a new class of behaviour, that is still becoming more and more complicated. Research into changes of information behaviour is very important for an individual and for the species looking for a way, a place, and meaning in today's huge information ecosystem, but which models, questions, and conceptual framework are used does matter.

References:

- Fisher, K.E. (2005): Theories of information behavior. *Information Today*
 Wilson, T. D. (2000): Human Information behavior, *Informing Science* 3 (2).
<https://www.ischool.utexas.edu/~i385e/readings/Wilson.pdf>
 Case, D. O. (2012): Looking for Information. A Survey of Research on Information Seeking, Needs, and Behavior. 3rd ed. Emerald.
 Manovich, L. (2012): Posztmedia esztetika: Krízisben a médium, Dec. 18.
<http://exindex.hu/index.php?l=hu&page=3&id=227>
 Spink, A. (2010): Information behaviour. An evolutionary instinct, Springer.

Information Black Hole

~ losing digital information because of format-related, conversion, and storage issues.

Expressions used with the same, or very similar, meaning: information disaster

Antonym(s): digital eternity

Expressions from related concepts: information loss

Which category? A freshly created word with strong visual and emotional content.

The fate of the phrase in the language system is questionable.

It appeared multiple times in the literary tradition of the information disaster; a number of authors expanded the idea into a cosmic allegory, writing about the creation of ‘information black holes’ at the permanent disruptions of information traffic.

In early 2015, Google vice president and one of the fathers of the Internet, Vint Cerf held a speech that received an intense response; he called an old problem an ‘information black hole’ for the first time. The issue in question is that the world of digital photos, text files, and electronic messages is imbued with the illusion of possession and preservation. We believe them to be in safe hands and consider their safety certain – while it is entirely possible that in the future, our centuries will be forgotten, because unlike cultural objects that once were physical and had been digitised, these may easily be faced with destruction instead of digital immortality.

Naturally all this only happens if we are not ready. If we do not pay attention to not only converting data sets when we change technologies, but also to keep old reading mechanisms and devices. If we use multiple physical sites of conservation based on the redundancies that are part of the nature of information.

EVALUATION AND RECOMMENDATION: In Spring 2015, Cerf’s warning turned into a huge list of search results, the phrase ‘information black hole’ suddenly became popular, making rounds in various segments of the Internet for months – then, just as fast, disappeared from the agenda. It is hard to tell what the fate of the phrase will be.

References:

Gilster, P. (2015): A Black Hole of Information? Centauri Dreams, February 17.
<http://www.centauridreams.org/?p=32581> [2015-11-26]

Information blindness

~ errors in perception caused by the limited nature of our sensory organs and cognitive abilities, prejudices, or certain information situations, and other reasons, that do not let us perceive and thus utilise information that is present, available, visible, and in reach.

Expressions used with the same, or very similar, meaning: information avoidance

Antonym(s): information gathering

Expressions from related concepts: communication noise, attention deficit disorder, Malthusian law of information

Which category? A technical term of sensory psychology and organisation sociology.

The phrase in the language system is close to exit its disciplinary framework and be used in a more general sense.

Let's imagine a visually impaired user who has an information set in front of them, but they can only perceive things they access through a channel (e.g.: a Braille reader). This is how the information blind face information, that would be easily identifiable as part of their sensory space, but lacking a channel, they cannot claim ownership of it. This may have multiple reasons. Psychologists study the phenomenon at the individual level, and organisational sociologists, at the company level.

The most important research question is the role of the metamorphosis of technology in the creation of information blindness. Paying attention to more and more information interfaces (multitasking)? Are the changing reading habits in the electronic space (specifically: the change of the fixating movement of the eye) responsible for the phenomenon that we remember the point of a quickly skimmed content, but not its details? In a company or office, are certain people responsible for the organisational information blindness, or is it the company culture? We may be characterised by information blindness in this sense in innumerable use situations.

The main reason for not noticing information that is, otherwise, 'in front of our eyes', is the mental wall built from prejudices, rigid assumptions, and beliefs. Information blindness may be healed by recognitions, in everyday moments of understanding and enlightenment. (It is much harder to be freed from the more severe form of information blindness, the information prison.)

EVALUATION AND RECOMMENDATION: The origin of the concept could not be found, those who use it do not refer to its first occurrence. We foresee its diffusion and popularisation, as it is very close to the ‘blind to something’ form that is very general and that has long been stably present in the language system. It is also usable to describe the behaviour of users who encounter information processing issues in the digital ecosystem, so that information blindness can be told apart from other kinds of deficits.

References:

- Harper, S. (2011): Social Aggregation and ‘Information Blindness’ – #accessibility. February 1.
<http://simon.harper.name/2011/02/01/social-aggregation-and-information-blindness-accessibility/> [2015-03-26]
- Wills, S.: Preventing information blindness Insight Management Academy.
<https://www.insightmanagement.org/5-min-insight/preventing-information-blindness>

Information bomb

~ the titular threat in Paul Virilio's book that leads civilisation to the edge of an unavoidable, huge catastrophe.

Expressions used with the same, or very similar, meaning: information deluge, information apocalypse, information cataclysm

Antonym(s): information utopia

Expressions from related concepts: information disaster, digital anti-utopia

Which category? A neologism used in an everyday sense, meant to embody “information culture leading to the ruin of civilisation”.

The phrase in the language system is used virtually exclusively as part of the Virilio perception.

We live in the era of the information bomb that ticks next to us, faster and faster, signalling the coming end of civilisation. This could be the single-sentence summary of Paul Virilio's 2000 book, full of factual errors and uninformed opinions that still, despite of its overstatements, managed to attract a cult following. The French thinker, known as the philosopher of speed, drew a possible future where information rules over a humanity that asphyxiates in information, loses its memory, faints into a collective blindness; then it falls into its doom.

Devices that transfer information rule over people, pollution becomes more intensive than ever before, and clones take over the now inhabitable Earth. In Virilio's work, the threads are spun by the United States, attempting to create world domination with its information domination, and he assigns most of the responsibility to them.

Virilio claims, not only in his book, but in interviews as well, that the idea for the “bomb” metaphor came from Albert Einstein, who talked about three bombs in 1954. The first, the two atom bombs, destroying Hiroshima and Nagasaki, had detonated by that time. The other two are yet to detonate: the ‘demographic bomb’ (that is widely talked about regarding overpopulation) and the ‘information bomb’. Roger Stahl attempts to develop the information bomb metaphor (Stahl, 2016) as part of the public discourse regarding cyber terrorism and information leaks, as an attempt to re-interpret the ancient trope of ‘words become weapons’.

EVALUATION AND RECOMMENDATION: Many have criticised the freedom and occasional confusion that Virilio allows in his use of terms. His book, meant to prove the validity of the information bomb, was itself more of a caricature than a real summary of problems. However, in this form, some truly fearful phenomena

may be encompassed in the concept, as its “quintessence”, therefore it will still have a number of followers (along with the myth of information overload), therefore the expression will not fade from the discourse for a while.

References:

Virilio, P. (2000): The information bomb. Verso, London

Stahl, R. (2016): Dropping and Legalizing the „Information Bomb” Communication Currents 5. (October).

<https://www.natcom.org/CommCurrentsArticle.aspx?id=7383>

Information broker

~ in a narrow sense, the specialist who connects the producer and consumer of an information product, in a wider sense, an expert who ensures the creation of (new) information, information production (for example, market research), searching among existing information, along with their processing with added value, analysis, evaluation, 'packaging', or even the expertise necessary for the construction of the information environment; an information advisor.

Expressions used with the same, or very similar, meaning: information expert, infomediary, information consultant, information agent, information professional
Expressions from related concepts: information services, infopreneur, Internet librarian

Which category? For now, it is only used in the relevant professional fields, but it also shows up in scientific works because of its embeddedness in information science.

The phrase in the language system sounds somewhat strange, it is easy to mix it up with stock brokers.

In English, they are called independent information professionals, otherwise, the German-originated information broker phrase has taken root; this latter one was first used in English in 1984.

Information products have been traded since the Middle Ages, and more industrialised medical and legal information enterprises sprang up in the late 19th century. The first information bureau service was founded in the late 1930s in France.

A modern information broker uncovers information needs, sources and analyses the widest range of (on-line and off-line) information, then presents and markets deductions in a targeted way. They work in networks, so that they can fulfil requests related to various fields. Their goal is to alleviate the customer's lack of knowledge and hunger for information. Their typical activities include company information research, competition monitoring, environment monitoring, knowledge management, informetrics, trend monitoring, literature reviews, and scientometrics. Market research companies, reference libraries, and to a certain extent, even journalists perform information brokering activities.

They are generally specialised according to their subject, industry, the type of information, or the form of activity. They are generally independent freelancers, but they occasionally are integrated into organisations.

The world of information experts is also very divided in its depth. For example, there are meta-brokers, who perform brokering work with information related to the information brokers themselves (though the term ‘metamediary’ with the same meaning is better diffused).

Information brokers have trainings, textbooks, professional organisations, and conferences.

EVALUATION AND RECOMMENDATION: One of the information expert/professional/specialist triad may, in the middle term, take over the place of ‘information broker’, without a change in content.

References:

Kinder, Robin – Katz, William A. Eds. (1988): Information brokers and Reference Services The Haworth Press

Information bubble

~ a special information environment characterised by being closed outwards. In other words: users only learn of content that reinforces their already held beliefs, points of view, commitments, or prejudices, and thus the chance of encountering information that contradicts them is considerably decreased.

Expressions used with the same, or very similar, meaning: filter bubble, information quarantine, information prison, information group, political echo chamber

Expressions from related concepts: information environment, information filtering, information blindness, information community, information bazaar

Which category? A professional-public expression that names a new phenomenon.

The phrase in the language system is, for now, used only occasionally, but because of its expressive power and the increasing importance of the phenomenon it represents, we expect it to diffuse.

If we put ourselves in an information quarantine, we generally are aware of it. The formation and inflation of an information bubble is generally hard to notice, as the way ‘smart algorithms’ produce personalised search results based on earlier searches, the user’s geolocation, or experiences related to user habits is not clear to the end user.

This isolation tightens and distorts the information space just like a pair of blinders, and only lets elements of a certain category pass. This is why Internet activist and businessman calls the phenomenon the “filter bubble” Eli Pariser, and his followers who, worried about the reinforcement of cultural and ideological isolation, look for and promote mechanisms that inhibit the creation of bubbles, and urge for an appropriate set of regulations. The issue lies in the fact that in the last couple of years the filtering that, in the past, had needed user permission, has changed, and now websites and portals use it without the user’s knowledge. By using these illegal filters, when the user enters keywords, the only listed results are the ones that are, based on previous search results, relevant to the user’s interests and personality. And although this may occasionally come in handy for the user, information bubbles offer an attractive opportunity for advertising companies, enterprises, political or religious groups to overrepresent themselves, and to acquire financial gain or influence for the persons or groups behind the relevant websites, services, social media sites, or search engines using these dishonest means.

EVALUATION AND RECOMMENDATION: This humorous metaphor may start to conquer the world, as the phenomenon it refers to is included more and more in the public discourse, and raising awareness of danger is an important part of “critical literacy”.

References:

- Zolfakharifard, E. (2015): Facebook is NOT an information bubble: Friends hold more sway over your newsfeed than the site’s algorithm, claims study. Daily Mail Online, May 7.
<http://www.dailymail.co.uk/sciencetech/article-3072839/Facebook-NOT-information-bubble-Friendshold-sway-newsfeed-site-s-algorithm-claims-study.html#ixzz46vU3fFTd> [2016-03-29]
- Pariser, E. (2011): The Filter Bubble: What the Internet Is Hiding from You. Penguin Press, New York.

Information bulimia

~ an often subconscious overconsumption of badly organised information that does not serve user goals (problem solving, education, recreation), but deform time management and may lead to tiredness or neuroses.

Expressions used with the same, or very similar, meaning: information obesity, information asphyxiation, infoholism, information junkie

Antonym(s): information avoidance

Expressions from related concepts: information pathologies, information dependence, information nutrition, information omnivore, information metabolism

Which category? A witty created word, born in a professional context, with the aim of naming a phenomenon. The development of the meaning is heading in two directions; the stronger of which seems to be the one using it to express emotion, as part of everyday conversations, as opposed to the description of a well-defined, narrow group of phenomena.

The phrase in the language system was considered popular for a while, however, its use has (luckily) declined rapidly for a while.

When Richard Saul Wurman first wrote down the phrase ‘information bulimia’ as a symptom of information overload in his book on information anxiety, he consciously and decidedly referred to the clinical eating disorder: as everyday anxiety often leads to overeating, information anxiety may result in information bulimia (Wurman, 1989).

Wurman’s somewhat flimsy conceptual innovation, however, does not serve the more detailed understanding of the phenomenon: if information bulimia exists, it may have innumerable reasons, not only information anxiety, and information anxiety may lead to various other consequences (e.g. actual bulimia). Thus the phrase, when it appeared, became a part of the conceptual cloud of theory that was problematic to begin with – information overload – with stylistic methods.

The literature used it in this sense for a long time, for exclusively dramatic reasons, and – once the phrase already existed – more accurate definitions were created to utilise it for a well-defined behaviour. For example, Dan Rothwell believed that an information cycle that resembles the physical binge eating and cleansing cycle of bulimics exist: for example, students cramming before a test or presentation who, after it is taken or done, delete the information forever (Rothwell, 2012). A Romanian researcher attempted to catch the phenomenon in the world of writing and book consumption (Ciortia-Neamtui, 2013), as a reaction to the growing selection.

EVALUATION AND RECOMMENDATION: We believe the analogy to be very forced, and far removed from the psychological problem of the original eating disorder. Even if information bulimia existed, its cause would not be a characteristic of the information environment, but personal frustrations, traumas, and self-image issues. We hope the concept will fade from use, as it has no real cognitive function.

References:

- Wurman, R. S. (1989): *Information Anxiety*. Doubleday.
- Rothwell D. J. (2012): *In Mixed Company: Communicating in Small Groups*. Cengage Learning.
- Neamtii, C. – Oana, S. (2013): *The Writing Bulimia. Books in the 21st century*. In: Iulian Boldea (ed): *Studies on Literature, Discourse and Multicultural Dialogue Arhipelag XXI Publishing House, Târgu-Mureș and The Institute for Multicultural Studies*.

Information bus

~ a system that connects various smart devices and remote controlled devices into a coherent information infrastructure. The passenger on the bus is the data that travels between the devices and the people served by the system, and the route is controlled through the central control module; partly by individual control commands, and partly by automatic settings.

Expressions used with the same, or very similar, meaning: information rail

Expressions from related concepts: information infrastructure, the Internet Of Things

Which category? An IT term.

The phrase in the language system is virtually unknown, it is only used by contractors and bus system developers, sometimes not even experts of other IT fields use it.

Originally, ‘information bus’ referred to the unified electronic base infrastructure that made possible for the devices in an intelligent, and later, smart home to communicate. Hopefully, newly built houses are future proofed by laying down various (copper, fibre optic) wires and cables (thus the term ‘information rail’ is occasionally also used). With the spreading of wireless signal transmission and the increase of the numbers of devices on the bus (e.g. cars, smart wearables, etc.), the physical space contained within the walls of the home has turned into a virtual space, but information buses are still necessary in this expanded space.

With the combination of a remote controlled unified base system and a central control unit, device handling, repairs, maintenance, and system protection may all be performed in a simpler and more time- and cost-efficient way. The system may be expanded continuously, and cables only take up a relatively small space, therefore they may easily be laid down in various points of a site, or, where that is a more adept solution, be substituted with wirelessly transmitted signals.

The benefit of the rail function in comparison to other systems is that as many sensors as necessary may be connected in order to ensure a continuous stream of data that the user deems useful (movement and CO₂ sensors, heat, light intensity, humidity). The phrase ‘Medical Information Bus’ (MIB) is widely used in technical literature; this refers to a sub-system that collects and transmits continuously monitored physiological data. The Contextualized Information Bus (CIBUS) manages and provides the connection between the (smart) home, the (smart) car, and the various network clouds of the smart city according to current functions.

EVALUATION AND RECOMMENDATION: It seems that the basic functions (preinstallation, expandability, connections, remote control, central control) that give the information bus its meaning do not change, only their contexts do. It is possible that many who have never heard about it get to know the phrase in new house and office building constructions. Where demand is low, the process of spreading is slower, and ad hoc uses, such as occurrences built on similarities with literal buses, must also be fought.

References:

- Ricquebourg, V. et al. (2006): The Smart Home Concept: our immediate future. IEEE, 23–28.
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.392.3847&rep=rep1&type=pdf> [2016-05-21]
- Wang, G. Q. (2012): Toward a contextualized Information-Centric Architecture Huawei. December 20.
<http://www.internet2.edu/presentations/tip2013/20130115-Wang-AsiaFIICN.pdf> [2016-05-21]

C

Information capitalism

~ a political-economical system, a new version of capitalism that trades innovation, production, and consumption (and profit, and thus competitiveness) to information goods, and productivity increased by informatising processes.

Expressions used with the same, or very similar, meaning: information mode (of production)

Antonym(s): information socialism

Expressions from related concepts: information and knowledge industry, post-industrial society, neocapitalism, technocapitalism, information goods

Which category? A political theory term.

The phrase in the language system did not diffuse, its use is occasional, it mostly appears in critical works of social theory.

One of the fundamental questions of information society literature has, from the beginning, been whether if we refer to the social form of the post-industrial era, is it also post-capitalist by nature?

Well, this question was decisively answered in the late '80s.

According to this, it was not the industrial age that had ended, only its 19th century form, with the dominance of the iron-steel-oil complex. The advance and 'takeover' of the information and knowledge industries did not change the fundamental laws of capital, it only led them to a new era.

The excellent American researcher and science organiser Rob Kling (1944–2003) first used the expression 'information capitalism' alongside its pair, 'information entrepreneurship' in his early Nineties work – signifying that it became possible to study both of these before the detonation of the Internet. Right after, Tessa-Morris Suzuki became a passionate analyst of information capitalism, followed by the most famous figure in networks and information age sociology, Manuel Castells.

He, in a portmanteau, calls information capitalism 'informationalism', as it refreshes, expands, and changes the previous mode of development of capitalism, in which new forms of information processing, knowledge creation, and communication became the primary sources of productivity, and thus the tools of power.

According to Castells, the three pillars of informationalism are property, in the form of shares, the manager class, that controls shares, and the global money market, where the shares are traded. In information capitalism, not only production is global, so is power. Christian Fuchs warns us that today only transnational information capitalism exists.

EVALUATION AND RECOMMENDATION: The fate of the concept will doubtlessly be determined by whether the image of capitalism behind it will still be valid after more time passes. In this case, it will likely be used by a much wider range of people than currently.

References:

- Kling, R. (1996): *Computerization and Controversy: Value Conflicts and Social Choices*. Morgan Kaufman.
- Morris-Suzuki, T. (1997): *Capitalism and the computer age*.
<http://newleftreview.org/static/assets/archive/pdf/NLR15604.pdf> [2015-10-03]
- Castells, M. (2010): *The Information Age: Economy, Society and Culture 1-3*. Wiley Blackwell, 2nd ed.
- Fuchs, C. (2008): *Internet and Society. Social Theory in the Information Age*. Routledge, New York.

Information cascade

~ a social psychology phenomenon: a person makes a decision or forms an opinion based on the observation of the behaviour of other people, disregarding their own knowledge and impressions.

Expressions used with the same, or very similar, meaning: herd behaviour, peer pressure

Expressions from related concepts: information influence, wisdom of crowd, meme spread, information community, information group

Which category? A scientific conceptual innovation used for an everyday information phenomenon.

The phrase in the language system is only known by social psychologists.

In physics, IT, and other technical sciences, ‘cascade’ is a popular term for the pre-defined succession of operations or events – as a schematic drawing may bring the image of a waterfall, that the word originally means, to mind.

Social sciences started the multifaceted analysis of the spreading newly constructed knowledge, innovation, more than a hundred years ago. Then, in the last two decades – working on different kinds of information – both economy game theory and social psychology started paying attention to the cascade phenomenon.

One of the first users of the concept, Banerjee (1992) used the following example to illustrate information cascade: let’s imagine that we have to choose a restaurant in an unknown city. Based on our own research, we would decide to eat at restaurant A. However, when we arrive to restaurant A, we are faced with the discovery that no one is eating there, yet the neighbouring restaurant B is full of guests.

If we believe that the taste of the other guests is similar to ours, and that like us, they also possess the information for choosing the restaurant, joining the crowd instead of depending on our own information. By choosing restaurant B, the first guests convey information regarding their own knowledge to the later arrivals. If at the time of our arrival, there are more guests in restaurant B, the conclusion drawn from their choice may be stronger than our own knowledge. As if we suddenly found ourselves under a waterfall: it seems reasonable to join the majority, disregarding our own previous information.

Information cascade theory explains a number of imitation-following phenomena of contemporary society: fashion, self-affirming best-seller lists, lightning-fast spreading new technology, cultural behaviour, but even patterns of local crime, political movements, or changes of election preferences (Bikhchandani et

al., 1992). Information cascade also works on the group level, where groups of people behave like individuals (Eftekhar et al., 2013).

When research is performed with the weaponry of network research, we can understand the ways and waves that network members use to influence each other's behaviour (Easley, 2010).

EVALUATION AND RECOMMENDATION: We feel that the image of the information cascade, a waterfall that falls on us is not a particularly good metaphor for the phenomenon to be named: finding a better expression that is also sensitive to differences between decisions is only a question of time. The situation is very different if, as a result of the information cascade, decisions will have a greater base in experience (gain), in other cases, the behaviour of others is more misleading (loss).

References:

- Banerjee, A. (1992): A Simple Model of Herd Behavior. *Quarterly Journal of Economics*, 107.
- Bikhchandani, S. – Hirshleifer, D. – Welch, I. (1992): A Theory of Fads, Fashion, Custom, and Cultural Change as Informational Cascades. *Journal of Political Economy* 100 (5).
- Easley, D. – Kleinberg, J. (2010): *Networks, Crowds, and Markets: Reasoning about a Highly Connected World*. Cambridge University Press.
<http://www.cs.cornell.edu/home/kleinber/networks-book/networks-book-ch16.pdf> [2015-01-23]
- Eftekhar et al. (2013): Information Cascade at Group Scale.
<http://www.cs.toronto.edu/~milad/paper/fp1006-eftekhar.pdf> [2015-01-23]

Information civilization

~ an immaterial, post-technological, global knowledge management-based civilisation that is a possible alternative to the present physical/material/technogenic civilisation.

Expressions used with the same, or very similar, meaning: information society, post-information society

Antonym(s): technological/material civilisation

Expressions from related concepts: Information Nirvana

Which category? A high-level social theory umbrella category with a loose literary tradition.

The phrase in the language system has started folklorisation in an everyday sense, and this often decreases the tightness of the original meaning.

If a developed civilisation has an inappropriate attitude towards handling information, it collapses – this is the message Star Trek creator Gene Roddenberry sends with the tragedy of the fictional planet Vulcan. I.e.: it either becomes an information society or is destroyed.

It is not bizarre to start here. The interesting approach of trying to look at humanity and our planet with the eyes of an imaginary extra-terrestrial (the so-called alien perspective) has existed in social sciences for a good while, with the aim of asking only the most comprehensive, most basic questions (as only these are visible from ‘a distance’). Compared to the category and literature of information society, we are on an even higher, even more abstract theoretical level, most mature theories were developed by Japanese and Russian researchers.

Information society is characterised by a considerable shift towards information and knowledge products, goods, and professions in the structure of production, consumption, and employment, and this causes deep institutional and lifestyle shifts in society. It remains technological and industrial, just like before, but now, information technology and information economy take the lead. It is still built upon a physical/material structural base, and differences in power and development, and the capital relationships are similarly connected. However, the direction of exceeding it may be outlined. According to Yoneji Masuda (1980) the information civilization may be “given birth to”, helped to life by information society, if the immaterial side can become dominant instead of physical activity. In the vocabulary of Sztjepin and Tolsztih (1996), it refers to the continuous decrease of the material-energetics needs and the increase of the information need by creating a civilisation based on “post-materialistic values”, and transcending the technical (technogenic) civilisation. While maintaining sociocultural diver-

sity, compared to the present world of differences and enmities, only a shared activity that stretches the entire planet may frame our civilisation. And as that is information-based, it is only possible if information is shared and open (every member of society must be able to access information), an information civilisation must, inevitably, be democratic and equal; its management and governance may be based on a new type of collective knowledge (Kumon, 1994).

Thus information civilisation is really an idea for the future, an alternative of post-information civilisation. It is, however, not just fiction or utopia, but a scientific discourse in the category of social macroevolution.

EVALUATION AND RECOMMENDATION: As we saw, thinking about information civilisation is a point of view with an exceptionally high level of abstraction. However, when we encounter it in texts as a synonym of “information-rich world”, or “days characterisable with too much information”, it becomes immediately clear that the extra message, the intent of emphasis hoped from the use of ‘information civilization’ actually ruins the original interpretation, as it “drags it down” to considerably lower-level discourses. These occurrences should be criticised and corrected so that they do not disturb our clarity of vision.

References:

- Sztyepin V. Sz. – Tolsztih V. I. (1996): A demokrácia és a civilizáció jövője (Future of democracy and civilization).
<http://www.c3.hu/~prophil/profi993/STEPIN.html> [2016-04-22]
Kumon, S. (1994): Theory of Information-oriented Civilization. NTT-shuppan.
Masuda, Y. (1980): The Information Society as Post-Industrial Society. Tokyo, IIS, Washington DC, The World Future Society

Information clearinghouse

~ an organisation that is created to collect and promote information regarding certain fields of expertise, and information regarding well established, practical issues.

Expressions used with the same, or very similar, meaning: information provision, information warehouse

Expressions from related concepts: information brokering, database, vertical portal (an interface where as much as possible from a given field of knowledge is uploaded), information hub, information institute, Informatorium (a publication presenting important information from a field)

Which category? Primarily used in the United States as the name of a type of institution in a professional-public use.

The phrase in the language system knowledge of it is limited, however, where it is used, it is very popular.

The clearinghouse is one of the ‘classic’ institutions of the financial world.

It aids the realisation of transactions between banks (or even companies) with a money substitute that makes the ‘circle’ of services faster, simpler, and cheaper.

When, in the mid-1950s, the first business-minded information providers were founded (mostly selling collected and organised data to megacorporations’ R&D divisions), these had many names and operating principles: they provided information over the phone, collected and handed out information ‘packages’, and, after a while, published regular information publications. These institutions working with business models dedicated to selling information were first named ‘information clearinghouses’ in an 1953 article (Herner, 1953), but the name only became more generalised and popular much later.

Primarily when not only businesses, but state and federal agencies, and later still, NGOs and non-profit market actors started to use this name for themselves when they undertook collection of special information from a field of expertise.

After the appearance of the Internet, most of them ‘moved’ to the Web, and a number of national data sets became international. Although their operation is similar to the greatest basic information institution, the library, they are also remarkably different. A building is not necessary for their operations; document procurement, storage, and provision happens in varying circumstances, with varying conditions.

An incredible diversity of content characterises information clearinghouses. They cover innumerable fields, from water management to data on bugs that pose a danger to households, from local history to types of poisoning to real estate

affairs. Still, most are specialised in medicine and healthcare data. Giant information storehouses have been built for various disease types that make access to the newest research, results, and experiences with treatments possible, also providing detailed information regarding the doctors, hospitals, and institutions treating the disease.

Information clearinghouses offer their services in such a quantity that in a number of fields, there are ‘yellow pages’ to help find them.

EVALUATION AND RECOMMENDATION: the phrase is unknown in many language areas, and it is not expected to gain hold. The clearinghouse-like nature that gives the concept its meaning is only found in these information collections to the extent of being a shared resource of operators who work in the same field, and often, the recommended information is not even owned by the provider – only the meta-information on its location and availability. Thus the phrase is well diffused not because of its ingenuity, but because of the established convention.

References:

Herner, S. (1953): Brief History of Information Science. *Journal of the American Society for Information Science*. Republished: 1984 May 35 (3), 157–163.

Information commissioner

~ the responsible, agent, official, or ombudsman of information rights in information-conscious democracies.

Expressions used with the same, or very similar, meaning: information ombudsman, commissioner of information rights

Expressions from related concepts: information self-determination, information rights, information officer

Which category? A professional-public name, well diffused in political and legal theory and practice.

The phrase in the language system has entered the dictionary of information-conscious citizens, but it rarely reaches the language of the news, only in relation to some exceptional event.

From the early Nineties, national offices that dealt with these issues in an integrated manner came about to aid the realisation of information rights (primarily information self-determination and freedom of information). Depending on the ‘weakness’ or ‘strength’ of their jurisdiction, the size of the responsible organisation (from a one-person office to an entire official organisation), its legal status (government office, ombudsman answering only to the Parliament and the related office), and options for civilian control vary widely. The power of information commissioners also changes country by country.

For example, the Hungarian authority is led by a ‘strong’ information commissioner, therefore, by browsing the scope description, we may form an idea about almost every type of case that may be assigned to other countries’ information commissioners, as well. The Hungarian data protection office, the NAIH may carry out data protection and secret oversight procedures after citizen complaints or ex officio. It may turn to a jury in regarding infringements of public information and information of public interest, it leads a data protection register, and if requested, it may perform a data protection audit. It may make suggestion regarding the creation and modification of laws on personal data handling, public information, and information of public interest, it publishes recommendations for data handlers, and it delivers its opinion on special and unique publication lists regarding data on the activities of bodies performing public functions.

EVALUATION AND RECOMMENDATION: As the exact names vary from country to country, the name ‘information commissioner’ is known and well diffused in

some countries, and unknown in some others. As a category, it is only used by information rights experts as part of their own scientific and professional discourse.

Reference:

The Work of the Information Commissioner: Appointment of a New Commissioner House of Commons, Justice Committee (Great Britain, Parliament) Third Report of Session 2007-2008

Information commodity

~ everything (every purchasable product) that is purchased and consumed because of its content carried in regularly structured signals.

Expressions used with the same, or very similar, meaning: information (public) goods

Antonym(s): open information

Expressions from related concepts: information economy, information sector, symbol manipulation

Which category? A strong term, born in economic sciences, that, by now, is popular in a wider field of social theories.

The phrase in the language system it appears more frequently in the ‘information as commodity’ or ‘the commodity nature of information’ form, but in economy discussions, it almost always appears as a category of information commodity.

The range of information products grows continuously. Ever since people have traded goods, some of them have been traded in return for information goods. Information commodities have entered a new era with commodified information mass products (books, magazines, maps, later audio and video recordings). Software and IT data products joined these products from 1982 onwards, and it was around this time that, (based on a British publication) debate on the nature of information commodities has become more dominant in the information economy literature.

Pieces of information are goods like any other, but their behaviour is different in many ways. Neither their value, nor their price can be defined as with conventional goods. The price of information products is not determined by the cost of manufacturing, but by user evaluation. Creation of information products has a high permanent cost, but low marginal costs (i.e. the first copy is ‘expensive’, but the cost of creating new copies is negligible).

By the time, however, the first copy is created, most of the costs are already lost). The cost of information creation is not sensitive to the size of the intended use, and there are no natural limits to the capacity of auxiliary multiplication. Even though as information is used, its value ‘wears away’, the categories of amortisation used with tools are not valid here. Information may not be expropriated, as it is not lost to the seller when it is transferred. Information is a so-called “experience good” – its value is only recognised after buying it (that’s why branding is exceptionally important here, and why try-before-buy is used more and more as a marketing tool).

Creating information is a much faster process than consuming it. The barriers of consumption are defined by (information) literacy and the level of education, as these define how efficiently various people can use the same piece of information. No notable change happened in the nature or in the significance of information, the main moments are on the levels of infrastructure and technology. In economical analyses, information must be treated as a non-depletable resource.

EVALUATION AND RECOMMENDATION: Information commodity comes up not only in debates regarding information capitalism, but also in ones regarding the alternatives of the present financial order, typically with the addition that they should often be treated as common goods, and not market products that increase inequality. Until the start of this shift, while money and the information marketplace exist, the concept will live on with an unchanged meaning.

References:

Goulding, A. (2001): Information: Commodity or Social Good. *Journal of Librarianship and Information Science* 1 (1–4).

Information commons

~ in a narrow sense, physical spaces equipped with modern technology that offer complex services of information experts, open 24/7 to users. In the wider sense, every information surface that is created with the goal of creating, keeping, or storing information, for a future communal use.

Expressions used with the same, or very similar, meaning: information public good, information warehouse, knowledge commons, learning commons

Antonym(s): information goods

Expressions from related concepts: information culture, information utility, open information

Which category? Professional-public use.

The phrase in the language system has not diffused, only in a number of communities (higher education librarians, information economy experts).

We first started to hear about information commons after the millennium. First, in the environment of expanded higher education libraries seeking an integrated role, then in the context of science and e-science, and finally, interpreted for the networked world of social information production. This is how, with gradual steps, we got away from the physical place, a special access point in a library corner, to Wikipedia, the on-line encyclopaedia. In this sense, every information warehouse is also a commons. In the meanwhile, the ‘place’ that gave the concept is meaning was always preserved: this is what the phrase is attempting to express, may it be real or virtual. The aspect of interest is not the legal nature of information (goods or commons, to be paid for or free), but the community embedding that gives the place of access its meaning.

These days, the hottest are of the world of information commons are access to educational and scientific content. There have, for a long time, been attempts to create Global Information Commons for Science. There are legal initiatives where researchers themselves upload and share their results without restrictions, and there are pirate sites where commodified, hard-to-access materials are illegally shared by information freedom fighters.

EVALUATION AND RECOMMENDATION: Translation into other languages has produced an extreme number of versions, from ‘public good information’ that distances itself from the spatial idea to ‘information cafeteria’, that only interprets the concept in the context of higher education libraries. The most common version is ‘information public space’, compared to which, ‘commons’ is a shorter form

that connects information with a physical space to a lesser extent, and its meaning permits the inclusion of virtual community spaces into the field of meaning, therefore we suggest and utilise this version.

References:

Ren Shuhuai et. al (2009): From information commons to knowledge commons: Building a collaborative knowledge sharing environment for innovative communities. *The Electronic Library* 2, 247–257.

Information community

~ various sized groups of people, connected by the various amounts of identical information they possess (without necessarily knowing about this).

Expressions used with the same, or very similar, meaning: information group

Antonym(s): information distance

Expressions from related concepts: information flow, information diffusion, information sharing, information exchange

Which category? A technical term on the intersection of information science, information history, and group psychology.

The phrase in the language system has not gained hold, although its use seems to gather strength.

Cultural community, experience community, thought community, language community, speaking community, fear community, problem community, moral community, knowledge community, fable community, vision community, traditional community, identity community, risk community – just a makeshift list of what factors can bind people who possess the same mental content.

All the listed elements are specific information sets: organised groups of basic of pieces of information. Information community can thus be defined as a set made up of a number of community members and the pieces of information and information sets they possess. (Not only information sets may be shared, but basic, free-standing pieces of information, as well: a single smell, a single sight, a single event.)

Information communities are open systems in constant motion. On the ‘human side’ of the system, the entry and exit of new community member, the increase or decrease of the community may change the formula. The extremes of this are the global information community and the so-called information Mohicans. The global information community is the only set that is made up by all people who live at the same time with the information (in other contexts, called universal) they all possess. In the domain of shared information, there are the elements that are, for them, identical in the world in a meaningful way. Information Mohicans, on the other hand, are the last representatives of a language, a culture, a world of knowledge. While there were two or three, they created an information community that is the opposite of global: very few people with a huge amount of shared information. A key question of the information community approach is how many copies of the same piece of information exists in different heads. This view con-

siders communities information and knowledge transfer (storage) systems, as information production and consumption are both individual level processes.

One person is a member of a lot of information communities, and their position in them changes constantly: the information that gathers in one's head grows and grows, and successfully spreading information makes people members of larger and larger information communities. All this is significant when we intend to understand a difference in behaviour, a difference in the way events happen – or the natural history of the birth of an invention, an innovation. These may often be explained very convincingly using information community structures and dynamics. For example, a deficit in solidarity may occasionally be traced back to the lack of information communities.

EVALUATION AND RECOMMENDATION: The common language the concept of information community after the theoretical-scientific literature start in the same meaning in more and more chance situations (to describe job seekers, architects with the same issues, TV show fans, and others). At the same time, translating 'information common' as information community is incorrect, here, information commons is the correct choice.

References:

Singh, J. S. (1984): Information Communities: Some Possible Techniques for Information Needs Analysis (Conference presentation publication)

Information compensation

~ the state makes it possible for its citizens to learn about all the data or documents collected about them by the previous system's secret services and other authorities for various reasons and with various methods, that had previously been secret or hidden with more favourable terms than the general ones.

Expressions used with the same, or very similar, meaning: –

Antonym(s): censorship, information quarantine

Expressions from related concepts: agent files, agent act, secret services, information self-determination, lustration, freedom of information, regime change

Which category? The word came from politics and entered the legal jargon.

The phrase in the language system has not become known outside Eastern Europe, and the phenomenon itself is generally paraphrased.

The rehabilitation and compensation of people who had been disadvantaged by the previous political elite by illegal means was a typical issue in Eastern European regime changes. Information compensation was discussed along with material compensation (for confiscated property, goods, works of art, land, etc.), but its process only started with some delay: so that all about whom files and documents have been made in illegal and immoral ways, typically using secret service methods, with recruited and blackmailed people, undercover agents, and informers.

Information compensation, that became the part of ignoble political games (along with its 'cousin', the screening of those compromised in the previous political system in order to remove them from public life), was realised according to various rhythms, ideas, and practices. In the concerned countries, there have been long debates on whether information compensation aids or hinders public life, how civil rights of those who performed the rights infringements should be considered (for example, redacting their names on the copies), how those with access should be regulated, and what publicity can uncovered information receive. In order to do this, in this special case, extra rules had to be made that help persons harmed by the previous system to gain compensation quicker. When, with much delay, the relevant laws and regulations were born, archive access remained the last obstacle. This had both objective (the everyday reality of information compensation is a large-volume document processing and data provision public office operation) and subjective reasons (it was difficult to change from the earlier practice of secrecy and limited access, documents were lost or destroyed).

In the meanwhile, the theoretical legal debate was concerned whether information compensation should be considered an individual right (and part of infor-

mation self-determination), or depending on a society's involvement, getting to know the past better is a right of a society as a whole, because in this case, the relevant issue is the freedom of access to public data, and individuals' right to access public data.

EVALUATION AND RECOMMENDATION: The concept is clear, its meaning is obvious, it is used in this sense by people who come into contact with it. Stakeholders' demand for information compensation decreases step-by-step, and slowly, the incriminated document groups become archive files, just like the others that researchers of later ages will analyse. Today, information compensation is a well known concept, but by then, it will have become a historical factoid.

Information compression

~ decreasing the physical size of data sets for easier storage and broadcasting.

Expressions used with the same, or very similar, meaning: data compression

Antonym(s): information decompression (unpacking, opening)

Expressions from related concepts: data management, data storage, data transmission

Which category? An information data science term.

The phrase in the language system occurs more often in other (genitive) formulas than the portmanteau term-like formula, and instead of the generic term, the lower-level terms (image compression, audio compression) are usually preferred.

The brevity of messages and press releases, as much information as possible transmitted in one unit of time, and transmitting the same piece of information as accurately and quickly as possible (brevitas) was a requirement and principle of ancient rhetoric.

However, by now, it is used virtually exclusively in IT and computer sciences, as the name of a special two-way procedure performed on data – but instead of the professionally correct data compression, many use information that seems more general, more exciting, and transcending the disciplinary trenches. Any objectified and digitalised information carrier (bodies of text, text databases, unstructured text, sounds, videos, images) has a size that can be decreased using various methods. Technically, the number of bits with which the file in question takes up storage space will decrease. The aim of compression is the simplification of storage or the fast and error-free transmission of files. When the files must be used again, the inverse of the compression process may be performed on it. Virtually all users know the operation well, as in the primary school of information literature, compression (packaging) and extracting with the relevant software products are always taught. Of course, experts use very different techniques and compression ratios on ‘industrial’, large-scale information sets, e.g. image libraries.

The compression process may be lossy (data deemed unnecessary is lost from the files) or lossless. In these cases, algorithms exploit statistical redundancy to be able to turn the process back without any loss of information. Statistical redundancy means that fancied and real pieces of information are often different. For example, in a picture, the file may store the colour of an entire area pixel-by-pixel instead of storing the colour of the entire area. Compression can use this, and instead of associating a colour to every pixel, it can associate numerous pixels with the colour. In lossy compression, unnecessary or less necessary information gets

lost from the file. For example, colours unperceivable for the human eye may get lost from a picture. These are then replaced by simpler colours.

EVALUATION AND RECOMMENDATION: In turns of speech that equate brevity of the message to brevity of the information, we often see the two phrases mixed together, but not in their contracted, technical term form. Only textbooks use it as information or data compression, experts and everyday users use compression without a prefix, or if they do, they use the type of the data set to compress (image, audio, word document, file).

References:

- Blelloch, G. E. (2013): Introduction to Data Compression. Carnegie Mellon University.
<https://www.cs.cmu.edu/~guyb/realworld/compression.pdf> [2016-05-20]
- Mittal, S – Vetter, J. (2015): A Survey Of Architectural Approaches for Data Compression in Cache and Main Memory Systems. IEEE, Transactions on Parallel and Distributed Systems.

Information configuration

~ structures constructed from basic units of information, the building blocks of our internal information worlds.

Expressions used with the same, or very similar, meaning: schema

Antonym(s): unique (elementary) information

Expressions from related concepts: information space, information processing, information continuum, information ladder, information spectrum

Which category? A technical term in information science, with a suffix imported from formalised conceptual systems, and a similarly strong need for a meticulously accurate interpretation.

The phrase in the language system is still finding its place, it has not diffused.

The reception of new information, and its incorporation among the pieces of information we already have is a continuous, unbroken process, transformative at every point: whatever enters the mind's processing system gains its meaning based on internal content and existing fields of meaning the moment it becomes information. But the transformation does not stop: a piece of information may enter newer and newer units, become part of more and more complex information complexes. It goes from being a basic piece of information to being a part of an information configuration.

We know the word 'configuration' from logic, mathematics, and linguistic science: when basic objects (numbers and words) join up to form higher-level units based on defined principles and rules, they are called logical configurations, mathematical configurations, or language configurations. This is the meaning in which we think of information configurations in the human brain. Physically, these are embodied by neuron connections, which depend on what, in its relationship to reality, the processing system considers meaningful, how it categorises these bits, what it uses to create a relationship, etc.

In psychology, information configurations organised on a higher level that automatically classify incoming stimuli and form them into a behaviour command are called 'schemata'. We know of a number of typical schemata, even though we may call them different names. The rules to a board game: a schema. The stereotypes and prejudice structures that we use to classify people into a pre-shaped world of meanings: schemata. The scripts we have inside that define what outcomes we expect from certain types of events in certain environments: schemata.

However, the schemata themselves are subject to permanent transformation. Overall schemata that include multiple sub-schemata may come to life; the path leads to fewer and fewer, more and more complex information configurations that

contain more elements – until we arrive at the super schema, the most complex information configuration that only transforms, but is not part of transformation: our world-view. The world-view may change or be substituted for another one, but that does not happen with transformation: when it becomes inadequate in driving behaviour, when it is not up for the task of classifying new information any more, it breaks down, and a new one replaces it.

EVALUATION AND RECOMMENDATION: Information behaviour is an essential part of the conceptual network that covers the basic processes of human information processing. It must be used in a strict and clear way. The word ‘set’ is also used, occasionally and incorrectly, as it refers only to quantity, and not to the structure (that configuration expresses with its reference to moulding and shaping). Use of ‘information configuration’ may help us separate and classify pieces of mental content of varying complexities, therefore we hope the phrase will take hold – or gain strength in the current accidental occurrence: testing hardware components.

References:

Z. Karvalics L. (2004): Bevezetés az információtörténelembe. (Introduction to Information History) Gondolat Kiadó, Budapest.

Information continuum

~ the status changes of information in its entire lifecycle.

Expressions used with the same, or very similar, meaning: information pyramid, DIK model, information ladder

Expressions from related concepts: group information, information community, information storage

Which category? A technical term rooted in anthropology; still, it is popular in the literature of information management.

The phrase in the language system has not diffused due to its ponderousness.

In a recent essay, Hari Srinivas lists 155 forms, “genres”, in which information may take a physical form, in which it may be “packaged” (Srinivas, 2014).

Yet this packaged state is transitional: information is freed from there, someone uses it, builds it up more, and re-packages it. If we look at changes from the direction of information, it only exists in its continuity, and goes through more and more transformation. The concept of information continuum refers to this ceaseless change of state: as the title of a popular book says, the social life of information (Brown and Duguid, 2000). Therefore, as opposed to the DIK model (Data-Information-Knowledge) that only wants to know how the higher and higher level information and knowledge sets relate to each other, information continuum deals with social processes, the community.

It is no accident that American researcher Barbara J. King chose information continuum as the title of her 1994 book on primate communication: it proves that the key moment in the evolution of information gathering and transmission was the development of the ability of group members to provide each other information without getting anything in return.

Researchers of Monash University, Australia, utilised this approach in the analysis of organisational knowledge processes, therefore they named it the Information Continuum Model (ICM). The model investigates the shaping, forming, and developing information flow from practical knowledge to forming theories and models – while the subsequent transformations (information experts, archivists, knowledge managers, authors, librarians, publishers, and others) are due to a series of actors in parallel,

The most common occurrence of the information continuum model today is in the literature of the analysis of internal knowledge processes of social networks. This is no accident: in these special social spaces, information flows and is transformed in many paths and ways.

EVALUATION AND RECOMMENDATION: Information continuum models are much more useful than the hierarchical and abstract DIK model. However, the chosen expression is one of the limits of their diffusion, as continuum is a difficult, unfriendly term.

References:

- Srinivas, H.: Packaging Knowledge: An Information Continuum. GDRC Research Output E-080. Kobe, Japan: Global Development Research Center. Retrieved from <http://www.gdrc.org/icts/continuum.html>
- Seely Brown, J. – Duguid, P. (2000): The Social Life of Information. Harvard Business School Press.
- Schauder, D. (2005): Sustaining a community network: The information continuum, e-democracy and the case of VICNET. The Journal of community informatics 1 (2). <http://ci-journal.net/index.php/ciej/article/view/239/203> [2015-07-28]
- King, B. J. (1994): The Information Continuum. Evolution of Social Information Transfer in Monkeys, Apes, and Hominids. School for Advanced Research Press.

Information costs

~ a type of transactional costs, the expenditure necessary to acquire information related to the knowledge of market conditions.

Expressions used with the same, or very similar, meaning: –

Antonym(s): information public good

Expressions from related concepts: information goods, mediatisation

Which category? An economic term with a strict definition.

The phrase in the language system is only known to experts using the given knowledge in practice, or working on them as researchers.

It is a piece of banal, everyday knowledge and experience that information, if it is valuable, ‘has a price’. Where information is traded, this is more than natural.

However, at business processes where before the (typically barter) transactions, various cost types must be considered, information is one of these cost types. Information cost is used strictly in this sense, ever since Carl J. Dahlman classified information (in search and information costs) under externalities in 1979.

We also note that the two other cost types of Dahlman’s typology (bargaining and decision costs, policing and enforcement costs) are also actualised through information and knowledge operations.

Information costs are costs that appear during economic transactions; they include analyses, the evaluation of the benefits of financial instruments, negative and positive information regarding investments that aid in making financial decisions, while search costs include the expenditures that are necessary to find these.

In the financial world, information access is often difficult not only because a trustworthy source of information is hard to find, but also because costs are generally very high. At other times, the information consciousness of decision makers is the issue, and in many cases, the ability to utilise and use the acquired information is missing.

In every case, the end result is a competitive handicap: however, keeping information costs at a proper level and good stewardship of them is no guarantee of business success, either. The point is, regardless of cost, the appropriateness of information: its value is only demonstrated, it only becomes measurable after it has been used.

EVALUATION AND RECOMMENDATION: The expression is simultaneously under pressure from two directions. It is spreading as information costs are included more and more often into professional planning processes, and there is more and

more awareness around it. On the other hand, in the world of Big and Open Data, costs can often be minimised. The consequence of this is that, in a number of cases, public information ceases to be a source of competitive information advantage – that is transferred to analytic ability.

References:

Dahlman, C. J. (1979): The Problem of Externality. *Journal of Law and Economics*, 22 (1), 141–162.

Information crisis

~ a crisis induced by information, the lack thereof, or the information environment itself. The operational error of a comprehensive system, caused by information components.

Expressions used with the same, or very similar, meaning: information disaster

Antonym(s): information economy, information availability

Expressions from related concepts: information metabolism, information digestion

Which category? Technical terminology – identical meanings in different scientific fields.

The phrase in the language system may get stronger if use will not stay isolated in various scientific communities but starts on the way to integration.

Although the information crisis is part of numerous professional vocabularies from cellular biology to corporate economy, the logical nature of the concept is identical, therefore we may speak of not multiple meanings, but versions of the same basic meanings.

When a cell starts growing, it gets harder to provide the necessary nutrients through the cell membrane, therefore the cell has more and more requirements towards its own cellular membrane. This is the state that biologists call the information crisis, that DNA copying solves even before the cell starts to divide. Typically, one of the textbooks on cell growth (Cell Growth, 2015) uses the example of the number of libraries growing according to the increase of the size of cities to demonstrate the similarity between biological and social systems.

Corporations may also undergo an information crisis because of their badly constructed and maintained information systems. For example, if the necessary data is available in a data warehouse, but those are not included in decision making, this in itself can often push the organisation into an information crisis. According to a new prediction by leading market analyst Gartner, by 2017, one third of all Fortune 100 companies will have undergone an information crisis as three quarters of the information systems of big and growing organisations exist isolated from each other, therefore the company cannot handle its own information appropriately (Hamilton, 2014). Representatives of a field of science are also faced with similar fears when they face that the amount of information available to them, always produced, grows explosively (Bentley, 1962).

We were faced with a 'classic' information world crisis by the so called Y2K problem, the computer failure caused by entering the year 2000, that in the end

turned out to be a slightly hysterised exaggeration of the actual danger. Some authors speak of a single newer, post-Y2K information crisis: the one started in the United States with their expansion of and lack of control over national security operations for counter-terrorist action, and the other side, the possible depth of systemic problems occurring because of any information terrorist actions.

And finally, using the phrase for the most comprehensive system level, the global information civilisation is valid according to some, considering the incredible growth of the information environment to be its main cause (Postman, 1990). And indeed: in all the presented systemic levels, an information crisis can only have two outcomes: solution or collapse. Yet – at least so far –, despite of the fears of collapse, the powers of solution always prevailed.

EVALUATION AND RECOMMENDATION: We expect that the phrase, used by various fields to help describe different, yet analogous phenomena, will itself become the centre of attention, and therefore become better known on a higher level of abstraction.

References:

- Glass, B. (1962): Information crisis in biology. Bulletin of the Atomic Scientists 8, 6–12.
- Cell Growth. Division and Reproduction 10.1. Chapter of a Study Book. Pearson Education
http://www.mayfieldschools.org/Downloads/mitosis_meiosis_book_study_guide_answer_keys.pdf [2015-03-26]
- Gartner, H. A. (2014): Predicts third of major firms will suffer information crisis. 2017 Techradar. February 28.
<http://www.techradar.com/news/world-of-tech/gartner-predicts-third-of-major-firmswill-suffer-information-crisis-by-2017-1229785>
- Postman, N. (1990): Informing Ourselves to Death
https://w2.eff.org/Net_culture/Criticisms/informing_ourselves_to_death.paper [2015-02-26]

Information culture (Infoculture)

~ in a narrow sense, the basic relationship that connects individuals to the entirety of the information ecosystem and its constituents: the synthetic entirety of skills, abilities, and practices necessary for the contentual and physical handling of information that is characteristic of individuals and organisations, using which, they are capable of having an active presence and functioning in society or the institutional environment. In a wide sense, the entirety of principles and mechanisms using which group level and national cultures connect to each other and humanity's knowledge and experiences in the now-global information ecosystem.

Expressions used with the same, or very similar, meaning: information civilization, digital culture, network culture

Antonym(s): information illiteracy

Expressions from related concepts: information society, information worldview, information management, information age

Which category? A comprehensive social theory term that also fits everyday discourses in an easily recognizable way.

The phrase in the language system has entered successfully with a diverse and multi-faceted use.

One of the first theoreticians of the concept, Steven Lubar defined information culture as a quality formed by the new world of information, communication, and entertainment machines (Lubar, 1993). Its characteristics: speed, accuracy, and a constant striving for novelty. A ceaseless desire and drive to keep the processes of control and management in hand, but also to present derivations from the norm.

A definitive democratic potential and ideology, but at the same time, a ceaseless drift towards the basic relationships formed by bureaucratic order and rules. The new-generation information consumers growing out of the selectability of entertainment content on the other hand, and profitability-minded content production on the other hand. This information culture was made up by the meeting of three irrefutable forces: the revolution of electricity that brought about a shockingly new horizon of opportunities, the large organisations that made information processes industrialised and professional (government, business, military, and research and development institutions), and the new type of citizens who are willing to purchase information and knowledge goods and consume them at home. And although we typically approach information culture from the direction of

machines and information technology, the point of this lies not in the tools, but in the people: the world of work, the everyday details of use, and in the opinions people hold regarding technology.

And all this is true even more so today, when information culture is clearly entering a new age: on electricity, the triumph of networking and the digital platform are built (of course, including comprehensive digitalisation projects, as well). In the device environment that makes new generation relationships and operations possible, the new systems of production and management are born and developed every day, on the other side of which, there are citizens armed with the new generation, mass computer literacy, mobile devices, and a serious information and knowledge assets. Information and data use became even more intense, and new 'scenes' were involved in the ever more integrated content consumption space (e.g. schools, museums, archives, and traffic systems – but through live on-line coverage, the temples of performative arts: concert halls and theatres, as well).

EVALUATION AND RECOMMENDATION: An important, high-level concept, under which there is an entire network of phenomena and lower-level concepts. Not to be mixed up with information literacy and information erudition.

References:

Lubar, S. (1993): *InfoCulture: The Smithsonian Book of information age inventions*. Houghton Mifflin Company.

D

Information deficiency

~ a state that keeps the degree of uncertainty of the decision that serves as the basis of choice of behaviour caused by the non-existence of information regarding the problem; existing but non-available information, or available, but insufficient information.

Expressions used with the same, or very similar, meaning: information rarity, information dearth, information deficit, hunger for information

Antonym(s): information glut, perfect information

Expressions from related concepts: information asymmetries, pseudo-information, quasi-information, information quarantine, information black hole, information games

Which category? A term that names a well-known, everyday information situation that has on occasion, in an organisation information management and information system design contest, started its way towards becoming a descriptive category with a higher level of formalisation.

The phrase in the language system is part of the basic vocabulary, only used in a categorical sense by those who work in the field of information management.

Attaining the information necessary for behaviour choice is an important form of activity in the complex of information behaviour. Recognising a shortage, identifying the information need, and recognising a deficiency, individuals, groups, and information processing organisations all turn to the information environment in order to make the appropriate decision regarding their future actions.

From a passenger who is after timetable information, to world organisations performing massive statistical background work, the state of information deficiency is known everywhere, and its termination is sought everywhere. It is important to notice that states that are considerably different are covered in the meaning of a single expression, and the various English synonyms reflect this well.

When a piece of information is not at all present in the information environment (it has to be produced or created) is the lack of information. If it exists, but is not available, it is missing information. If we have some information, but it is insufficient, is the shortage of information. And if we feel collected information to be appropriate, yet that does not help us make the adequate decision, it may

be inappropriate, foggy, imperfect, inaccurate, or misleading. We can refer to this as a deficiency, but we have to keep in mind that this deficiency has levels – but according to its nature, it leads to the same place. If, lacking the necessary information, we do not model the decision situation accurately, if we miss key elements from the space of deliberation, that will have its revenge by lower-level or failed action.

In creating the concept of an information system, accessibility and importance to the future user must both be considered, in this case, information deficiency (ID) is an integrative design viewpoint which, along with its similar versions, must formally be included in the design process (Srinivasan, 1981).

EVALUATION AND RECOMMENDATION: Among the numerous well-known states of information deficiency, one is considered exceptionally important. Citizens must develop an attitude towards events of public importance, as they may lead to a situation where action is forced. If the developed channels of information provision – media, public information, alarms – do not function sufficiently in these cases, the resulting information deficiency favours alternative explanations and largely decreases the ability to act. All this may have unforeseeable results. Decreasing the chance of information deficient situations is an information policy and information governance task which, with the proper information-consciousness, may be recognised and become institutionally manageable. Promoting the concept in this sense and giving it an advantage may be a valid mission for information experts.

References:

- Srinivasan, A. – Kaiser, K. M. (1981): Information Deficiency: Implications for Information Systems Design ICIS, Proceedings Paper 18.
<http://aisel.aisnet.org/icis1981/18> [2016-06-01]

Information deficit

~ a failure of science communication. A deficiency in the communication of scientific results resulting from failed simplifications and lacking explanations, easily filled by pseudo-scientific views.

Expressions used with the same, or very similar, meaning: information loss

Antonym(s): information surplus, full information transfer

Expressions from related concepts: lack of information, being uninformed

Which category? A professional terminology experiment. Its literary tradition is growing, but its meaning is not self-explanatory, it may only be understood with an explanation.

The phrase in the language system is unknown, except for science communication experts, its meaning cannot be guessed without knowing the context.

The science communication literature has been discussing the information deficit (and the information deficit model) since the millennium.

By the time complex scientific thoughts arrive to the interested members of society, they become shorter, lose their context, and get simplified with less technical terms. All this works like a translation: the content of scientific thoughts, ideas, concepts necessarily changes. Not even the best educational scientists and scientific journalists are protected from this information deficit that has no small part in the confusion of ideas regarding the environment or climate change. Knowledge leads to consciousness that drives people's attitudes in a good direction, and affects behaviour.

This is why Dan Olson perceives the main danger of information deficit in that most people reject or misunderstand thoughts received in an improper manner. The Hungarian chronicler of the concept, Katalin Mund emphasizes that according to the so-called 'deficit model', people's heads are empty, they know nothing about scientific results, therefore the lack of information has to be compensated for, the task is transmitting as much knowledge as possible. When people are scientifically educated, they turn away from astrology, as they consider it superstition. Efficient science communication solves the problem of the pseudo-sciences. According to her model, it is a one-way process, in which "the ready-made science flows from scientists to lay people".

The world has, by now, transcended this model. As for why the various social groups and members have the opinions and beliefs that they hold, there is a multitude of reasons, and science communication is only one of them. On the other hand, modern science communication considers citizens active participants,

many of whom are members of voluntary scientific programmes or professional amateurs.

EVALUATION AND RECOMMENDATION: As the information deficit model itself is obsolete, the model, and as such, the expression may be expected to go down the drain.

References:

Olson, D. (2001): What is „Information deficit theory“?

<http://www.quora.com/What-is-Informationdeficit-theory> [2015-03-26]

Information deluge

~ the apocalyptic civilizational destruction suffered because of the overgrowth of the information sphere.

Expressions used with the same, or very similar, meaning: information tsunami, information flood, information overload

Antonym(s): infotopy, post-information society

Expressions from related concepts: information receptiveness, information disaster, too much information (TMI)

Which category? An everyday metaphor.

The phrase in the language system is a fine example of non-conformity of the desired meaning and the chosen expression.

Although James Martin originally introduced the term in his 1978 book 'The Wired Society' as a neutral term to express the rapid growth of the amount of information, by today, it became one of the best known terms of panic literature. A deterring, malignant, Biblical metaphor of authors who dislike the increase of the amount of information growth, and therefore watch information society with a critical eye.

Intensity separates it from similar words around the ideas of 'water, liquid' (information ocean, information flood, information tidal wave), as intensity has a role of changing the meaning. It is that information, swollen into a tidal wave, doesn't just flood the world uncontrolled, but it is the wave of information itself that is the reason for the catastrophe.

EVALUATION AND RECOMMENDATION: Unfortunately the expression is used without its nature that gives it its meaning even in the scientific terminology that does not consider conceptual clarity – only to use something more emotionally powerful instead of 'too much information'. And as we consider the entire discourse of information overload misleading, it is no surprise that we do not recommend using information deluge, either, and we can only trust that it will be used as rarely as possible.

References:

Martin, J. (1978): Wired Society. Prentice Hall.

Li, K. et al.: Textual Information Extraction in the face of Information Deluge.

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.29.5979&rep=rep1&type=pdf>
[2015-09-29]

Information demand

~ a determinant of information behaviour: recognising the need activates the information searching activity, and if we consider this inner drive a need, it means the entirety of expectations related to the entering side that has a fundamental role in circular information processes.

Expressions used with the same, or very similar, meaning: information need, lack of information, hunger for information

Antonym(s): information avoidance, information blindness, information quarantine

Expressions from related concepts: obtaining information, information hunting, information foraging, information bubble

Which category? An everyday expression, but its use is very loaded in the literature of corporate information management and organisational theory. A basic category that is typically not necessary to define, as everyone uses it in the same sense, therefore dealing with the concept is practice-oriented, sensitive mostly to the types and forms of information demand.

The phrase in the language system is very well diffused, and innumerable other expressions have been born based on it.

Ever since homo sapiens started reflecting on their own cognitive activities, they have been able to put its need for information into words. Recognising the need is the engine of information acquisition, and its alleviation requires more and more solutions, information specialists, information systems, and information institutions that culture produced. As the industry that satisfies information demand, media has, from the first minute, not only provided, but provoked further information demand. (For example, an interesting piece of research has convincingly proved that the cradle of the demand for news in today's celebrity culture was the culture of publishing obituaries and necrologies in 18th century press (Barry, 2008).

Where analysis of information demand is important for the individuals' societal or organisational behaviour, researchers managed to clear up various interesting details. For example, we know that awareness and information demand depend largely on the level of education. However, the characteristics of information demand have a strong relationship to the level of risk-taking. General and special, basic and supplementary information demand may be distinguished. In an organisation, the information demand of top managers, middle managers, and employees is different. The information demand of the value chain and the supply

chain are different (in the government: the policy and developmental policy information demands). It is no accident that consulting companies offer their expertise to perform a comprehensive information demand analysis.

Organisations with a large need for information are the consumers, and owners of information goods are the suppliers who require and provide systems where information availability is provided on demand, according to its rhythm.

The engineering-technical side also builds information demand into its own vocabulary. For them, in data stream automatization and data modelling, information demand must be defined formally, in the form of a query that can be processed by the computer program. Information visualisation experts are more and more happy to talk about a visual information demand (which, to be exact, means the demand for new solutions that support visualisation of the results of the more and more complicated 3D models).

EVALUATION AND RECOMMENDATION: A very popular and loaded word; keeping its sensitivity for fine distinction in the network of related expressions is important.

References:

Barry, E. (2008): Celebrity, cultural production and public life. *International Journal of Cultural Studies* 11 (3), 251–258.

Information density

~ a (definable) unit of measurement of information placed in a physical or virtual spatial area. More information means a higher density.

Expressions used with the same, or very similar, meaning: information abundance, information richness

Antonym(s): lack of information, information dearth, information rarity

Expressions from related concepts: amount of information, information space, information ecosystem, information efficiency

Which category? An everyday use in numerous professional environments, with occasional moves towards becoming a technical term.

The phrase in the language system is very well diffused.

Strangely enough, it is used in contexts on virtually all forms and interpretations of information in the same, clearly identifiable sense, may that be the information density of a bacterium's genome, a map, a website, or an expression (Jaeger, 2010). Neurons that carry information have a density of relationships in the brain. The same idea is behind all meanings: a given physical space is capable of accommodating all information, but the more it manages to encompass, the more dense it is.

This interpretation appears the exact same way in IT. In the race for information density, optical and other data storage units turn back to the idea that “the density of information stored in holograms is magnitudes greater than that stored in traditional computer memories, and information may also be recalled much faster” time and time again (Novofer, 2010). Barcodes may carry a certain amount of information on their typical, rectangular surface, but attempts are constantly made to create a higher ‘information density per surface area’ (e.g. with the data matrix code). Real metrics and density measurement are necessary on the display hardware (how much still identifiable information is permitted by the number of pixels), and naturally, in the mathematical theory of information, where without this, the conceptual construct could not be exact.

We may also find information density in unexpected places. In city spaces (in which, for example, the analytic space theory of Gyula Hajnóczy paid particular attention to the viewpoints of information quantity), but a music critic may also write that there was an exceptional information density in the movements of the conductor (as the space of the movements limits the amount of transferable information).

An American professor attempted an extreme experiment: he measured the textual and image information density of 44 publications on an office bookshelf by “line centimetres”. Not surprisingly, he found that the information density of

images was higher than that of text (McCallum, 1989), reinforcing the old, banal proverb that one picture is worth more than a thousand words.

This is how we get to what is probably the most visited small world of information density; information presentation and contemporary infographics. Edward Tufte, the legend of visualisation proved in innumerable works that a successful attempt to increase information density that fits the shape and size of visualisation interfaces can multiply both user experience and the efficiency of reception.

EVALUATION AND RECOMMENDATION: An expression that may be used efficiently in numerous environments, its adequate uses can encompass more and more pieces of reality with virtually no limit.

References:

- Jaeger F. T. (2010): Redundancy and reduction: Speakers manage syntactic information density. *Cognitive Psychology* 61 (1), 23–62.
- McCallum, J. C. (1989): Information density of office books. *ACM SIGOIS Bulletin* 10 (3).

Information detective

~ a master of searching for information, with creative solutions to information problem cases.

Expressions used with the same, or very similar, meaning: information hunter, information search

Antonym(s): information blindness, information avoidance

Expressions from related concepts: information eating, information hoarding, information uncovering

Which category? An everyday expression with a high stylistic value, at the point where the information profession and the users' world meet.

The phrase in the language system has not diffused.

A detective collects, searches for, seeks, and re-organises information and proof until the truth is uncovered. It is no wonder that people who search for information professionally are happy to use the stylish 'information detective' title (that, as an association to master detective, means something along the lines of 'master of information searches').

The titles of programmes and educational publications aimed at the sharpening of discovery-hungry, curious children's senses of research methodology and knowledge often call them 'little information detectives' in order to address and motivate them as heroes of stories as this has a considerable literary past (Arnone, 2006).

In a library environment, we often find texts that help us understand the 'extra content' that sets apart information detectives from simple information hunters. In open information environments available to everyone, the special ability of the information detective is the ability to look behind information that everyone sees as the same. They notice false desires to convince and the interests behind them, as well as propaganda that distorts facts. They can discover falsehoods, and get at the truth behind contradictory information. The detective not merely searches and finds, but solves information cases.

EVALUATION AND RECOMMENDATION: The phrase is just an invented name when used to describe masters of searching, but it may make sense when it contains the excess that sets detectives apart from everyone else. The fact that the same abilities are often referred to as critical literacy is another thing; this is not only a characteristic of specialists with exceptional mental abilities, but should be part of the information literacy of every young user. Accordingly, whether it can take root as a serious term is questionable.

References:

Arnone, M.P. (2006): Mac, information detective, in the curious kids, digging for answers. A Storybook approach, introducing research skills. Libraries Unlimited.

Information Detective: Where did that information come from? A Berkeley College Training Page
<http://berkeleycollege.libguides.com/informationdetective> [2016-03-26]

Information diarrhea

~ an intermittent sickness and discomfort that results from the uptake of too much indigestible information.

Expressions used with the same, or very similar, meaning: information asphyxiation, information decrease

Antonym(s): information hoarding, information obesity

Expressions from related concepts: information nutrition, information bulimia

Which category? A professional-public term, failed even as an everyday one, used inconsistently, occasionally instead of other, already introduced terms.

The phrase in the language system has not diffused due to its bad associations.

Should it be called information diarrhea, when Google has more than a million results for a keyword (Meika, 2011)? And call all this a smelly information excrement?

It is a senseless, empty verbal exercise, as it does not take us closer to understanding a part of on-line culture at all, its entire message is that possible discourses on the epistemological place, semantic universe, and the multi-dimensional surveying of users' relevant forms of literacy are replaced by un-considered, meaningless, one-dimensional polemics. (In this case: the search engine did exactly what was required from it: demonstrated the number of occurrences of the expression on the web. It performed its task perfectly.) And if this isn't enough, all the authors quoted here envision the start of the Information Diarrhea Age, closely connected to the spreading of social media. Some believe that the cause of the diarrhea is the number of parallel channels that young people use to share feelings and thoughts (Aprami, 2013) Some assign this effect to Twitter, and the 'microblogging' (messages with a limited number of characters) it gave birth to (Konr, 2008).

EVALUATION AND RECOMMENDATION: It is no accident that the dysphemistic, bad-sounding word did not make it into the scientific discourse, and is not spreading: we hope it will fade completely from Internet slang.

References:

- Meika, L. (2011): Information Diarrhea Stinks Cascade Patch. November 11.
<https://patch.com/georgia/cascade/bp--information-diarrhea-stinks>
- Aprami (2013): The information age or information overload? Too much social media! January 18.
<http://indianfusion.aglasem.com/1248/information-age-overload-too-much-social-media/>
[2015-03-26]
- Konr, B. (2008): Managing Twitter Overload.
<http://www.konr.com/wordpress/2008/12/twitter-overload/> [2015-03-26]

Information diet

~ reversing information obesity, alleviating its consequences.

Expressions used with the same, or very similar, meaning: information filtering, information cleaning

Antonym(s): information obesity

Expressions from related concepts: information conscience, personal information management, information asphyxiation, information diarrhoea, information poisoning, information addiction

Which category? A neologism of dubious value in a space of debate not thematised by science.

The phrase in the language system has not taken root.

Information diet appeared in the literature of information overload, as a way to treat addiction-like information obesity. Accordingly, the first suggestions that became popular referred to a drastic information decrease and reduction, that Timothy Ferriss named the ‘low information diet’ in a best-selling book that advocated a change in lifestyle (Ferriss, 2007). He believes that an ideal information diet includes avoiding surfing the Web, along with checking e-mails often, and following the news without end.

Despite its extraordinary popularity, this proved to be an extreme and unsustainable approach and soon, the antithetic ‘high information diet’ concept was born. According to Dustin Wax (2008), as opposed to Ferriss’s theory that was not thought through properly, the proper use of information diet is not decreasing or eliminating incoming information, as we need them, but creating an environment in which we can ensure that an unnecessary amount of useless information does not reach us (there is no environment in which we only receive useful and valuable information).

By thinking this idea through, some realised that the issue is not the amount of information that pours on us, but the recipient’s lack of competence. Clay Johnson dedicated an entire book to convincing readers that, much like with real diets, the key is not information deprivation, but selecting appropriate content (Johnson, 2012). We do not need to eat less, but to select the appropriate information nourishment, aiming for balance. The key, as a critical researcher of information obesity, Andrew Whitworth recommends, is developing information literacy, which helps in attaining balance and developing proper habits. Tara Brabazon is right to call the state attained by a properly selected information diet and the corresponding world-view ‘intellectual fitness’ – if information obesity can lead

to physical symptoms, information fitness aids with the maintenance of the body as well as the mind.

EVALUATION AND RECOMMENDATION: There is little chance that it will not diffuse as a lazy marketing expression. The phenomenon it names can be covered and expressed by other words, therefore we do not foresee a great future for the phrase.

References:

- Ferriss, T. (2007): *The 4-Hour Workweek: Escape 9-5, Live Anywhere, and Join the New Rich*. Crown Publishing Group.
- Wax, D. (2008): Go on a High-Information Diet. (Blogpost), March 19.
<http://www.lifehack.org/articles/productivity/go-on-a-high-information-diet.html>
[2010.05.20.]
- Johnson, C. A. (2012): *The Information Diet*. Cambridge, MA, O'Reilly Media.
- Brabazon, T. (2013): *Digital Dieting: From Information Obesity to Intellectual Fitness* Farnham. Ashgate.

Information diffusion

~ the self-multiplying movement of information between individuals and communities.

Expressions used with the same, or very similar, meaning: information flow, meme reproduction

Antonym(s): information black hole, information trap

Expressions from related concepts: information receptiveness, information community, memetics

Which category? An expression that matches everyday use, but has turned into a technical term.

The phrase in the language system is spreading, it appears in more and more scientific fields and everyday situations.

As we saw in the article on information flow, the creation of information diffusion theory was motivated by the possibility of raising exact rules and laws that can help us better understand the social mechanisms of multiplication and transference.

In other words: measuring the success of flow in reception became questionable. Rogers (1962), interested in a special information set: innovation, created a model for this, that is still one of the classics of the subject, and was perfectly applicable for the description of the spreading of Internet use as social innovation.

The social patterns of the reception of innovation (early adopters, early majority, late majority, and those left behind) is only valid in situations where innovation is a challenge for everyday life, for example in the shape of being forced to change one's lifestyle. It forces decision and choice, occasionally financial and social ones. However, information occasionally spreads for very different reasons: news referring to events from further and further points of the world. Gossip and scaremongering regarding the life of small groups. A popular melody. A baseless prejudice.

When researchers ask the question of what explains that certain pieces of information are met with walls, while others spread through communities like wildfire, and sooner or later become well known among a wide range of people; social groups and individuals are only their 'hosts', through which information can multiply itself further. This approach materialised in the epidemiology model of culture, where the analogy of the spreading of information is the spreading of disease and infections (Sperber, 2001), than in the meme theory of culture, where meme, created to the analogy of gene (cultural gene, an information set that reproduces itself), information that spreads successfully is the subject of the study.

Memetics is its independent school (Blackmore, 2001). The spreading of information may be studied without using the dictionary of memetics, as the conceptual and instrument system of network research is especially suited to this.

The spreading of information may also be described as an increase in the number of people who may be described around the given piece of information. Memetics is sensitive to the mechanism of spreading, while the theory of information communities is sensitive to the actual information set's social organisation influences social actions.

EVALUATION AND RECOMMENDATION: Information diffusion is a crucial question of both cultural history and information science, with very strong historical implications. The concept of information diffusion is diffusing unstoppably.

References:

- Rogers, E. M. (1962): Diffusion of innovations. New York, Free Press of Glencoe.
Blackmore, S. (1999): The Meme Machine Oxford University Press

Information digestion

~ in general, slowly taking ownership of, and processing information. In a special sense, supporting the search process by reducing text written in any language to relevant pieces of information without losing meaning.

Expressions used with the same, or very similar, meaning: information implosion

Antonym(s): information bulimia, information hoarding

Expressions from related concepts: information (pre)processing, information filtering, selection

Which category? The specialised meaning that developed from the ‘banal’, everyday expression is only meaningful for a small professional circle.

The phrase in the language system is rarely used, its fate is questionable.

When time is needed to understand, process, and orient ourselves to the heard, received, or acquired information, we use the ‘digesting the information’ formula. It does not seem like a bizarre composition, as the main similarities between making food and information input are easy to see (it is no coincidence that an entire family of metaphors came from this idea).

As the technical term ‘information digestion’, it is used much less frequently, but there are examples. For example, in the mid-eighties, it was used to reflect on being informed only from ‘volatile’ sources of information (hearsay, news on the radio or on the TV), as a chronic issue of information digestion. On international waters, however, it became so popular after the millennium that even its subordinate derivatives were created – such as rapid, fast, or silent information digestion. Then in 2010, a serious attempt was made to anchor the phrase to a defined, narrow meaning.

French researcher Gaël Dias who works on the machine processing of natural language was attempting to answer the problem of the diversity of human languages stopping web search engines from preparing pre-processed information from texts of a different language from the search terms. He started looking for a language-independent solution that can combine the two factors and overcome the language barrier of any natural language.

He tried to get there by pairing two methods. Extracting implicit knowledge from the language in question, and by ‘digesting’ explicit information acquired from real texts of diverse genres. In the case of texts, this is a reduction, a simplification of the original text to pieces of information relevant for the search so that it stays understandable, but contains to unnecessary, secondary elements.

The methodology has a number of other elements, and its eventual success, adaptation, and development may help the term it recommends to take hold as a technical term.

EVALUATION AND RECOMMENDATION: It is hard to tell whether the expression has a chance of spreading among artificial intelligence researchers. Maybe there is a less strange-sounding, more neutral term.

References:

- Does food digestion serve as a metaphor for information digestion? www.youtube.com/watch?v=0iSPU2RpjAQ [2015-12-07]
- Dias, G. (2010): Information Digestion. Machine Learning. Université d'Orléans. <https://tel.archives-ouvertes.fr/tel-00669780/document> [2015-09-23]
- Svigir, M. (2015): Moments of Silent Information Digestion. <https://www.linkedin.com/pulse/moments-silent-information-digestion-dr-mario-svigir> [2015-11-13]

Information disaster

~ an unforeseeable event in the information environment, with devastating effect.

Expressions used with the same, or very similar, meaning: information catastrophe, information black hole

Antonym(s): stably operating system

Expressions from related concepts: data recovery, data security, backups

Which category? These two words that are sometimes used as a technical term are generally only put next to each other occasionally.

The phrase in the language system has not taken root, its meaning is clear, but not entirely cleaned up.

After a number of industrial and natural disasters in the late 90s, the term ‘information disaster’ was first used refer to the possible effects that can result in a stop of the development of the emerging electronic economy or its relapse. It was used to refer to a combination of events that can lead to a collapse of the world of on-line trading and finances (‘financial information disaster’). And although damaging the physical infrastructure may cause irreparable damage, the use of ‘IT disaster’ is correct there. The spreading of this latter one is well demonstrated by the fact that today, we encounter it not only in hardware and network administration guidebooks, but, for example, among the documents of a town mayor’s office, where “an IT disaster is when the normal operations of the IT system are disrupted for enough time that the workflow is damaged irreparably and unbearably”.

Informatics disasters always mean information disasters, as well, but the information environment can also be damaged along with the perfect functioning of networks and machines. Computer criminals, virus makers, spammers, and information terrorists all pose a threat of information disaster. Information disasters may not only be the destruction and damaging of stocks (and the information they carry), but also a crisis that affects the entirety of the information environment. After all, vulnerability is present on every level: individuals may suffer information catastrophes that are applicable solely to them (e.g. a loss of personal files), and it may happen to the entirety of the technological megasystem personified in the Internet (this was embodied by the Y2K scare resulting from the seemingly hard solution to a banal problem of dates).

Reasons behind an information disaster may not only be design or functional failures or deliberate destruction: it is often traced back to human errors: neglect, carelessness, and underestimating danger. Expanded interpretations of information disaster are related to this. Some think that more and more connected infor-

mation systems that know more and more lead to a more comprehensive vulnerability, and the information benefits enjoyed today make perception of the real danger and effective future reactions more difficult – thus this state itself will turn into a massive information disaster. A variant of this idea considers information wealth amassed easily, without control, context, and a critical framework to be a reason behind a loss of cultural-civilizational values, and perceives the loss of quality as the information disaster.

EVALUATION AND RECOMMENDATION: Although there is a clear drive (especially in computer security literature) to make ‘information disaster’ into an accepted, standardised expression, the term did not start on this path. We believe the primary reason for this is that there is no need for an independent term to express: disrupted operations of information systems may have very difficult, occasionally catastrophic results.

References:

Horton, F. W. – Lewis, D. (eds) (1991): Great Information Disasters. London, Aslib.

Information discovery

~ an activity typically based on individual search and process strategies transcending pre-formed information channels and sets, that creates new information value by uncovering hidden information and presenting connections not visible at the beginning of the process.

Expressions used with the same, or very similar, meaning: information research, information retrieval, data mining

Expressions from related concepts: e-discovery, Big Data discovery, information hunting, information filtering, information gain

Which category? A term often used incorrectly even by those in the library and information science field.

The phrase in the language system is virtually unknown outside the narrow range of expert groups. The story of the concept starts with the – partially standardised – information uncovering coming from the library and scientific environments, and still inherits some of its methods from it, even if it has been happening in considerably different use environments.

Its extra meaning compared to information research is that it does not only refer to simple queries in typical environments, but it always refers to answering an unexpected, unusual question. In other words: it is not used to find existing information, but to create new, missing information. Therefore it has a great added value, and the expertise of the expert performing it is very important; uncertainty and accident have a great role (Race and Makri, 2017), and so do creativity, creative imagination, and the recognition of new meanings (Kerne et al. 2008). Despite all this, the repertoire of automatic information discovery tools is growing, as the specific construction of the World Wide Web, keyword searches, cloud architectures, and the strengthening practice of data connection fits the possibility of their use. Some use environments stand out. In legal information discovery, stakeholders attempt to find the most advantageous hidden connections by collecting all the relevant evidence, processing, identifying and checking information, and reviewing and comparing legal documents. The world of healthcare information is a similarly hot area, where in the network of patient data diffusion, medical expert knowledge, and new diagnostic methods, uncovering every piece of information is like a discovery (Hristidis, 2010).

At global organisations and knowledge companies, repeated information discovery cycles may lead to amassing a large amount of information that cannot be stored in paper-based systems any more, only on electronic platforms – therefore

it is more and more common for information discovery to be performed by specialised external contractors.

EVALUATION AND RECOMMENDATION: There is no doubt that discovery has more of an emotional charge than uncovering, yet in multiple languages, the latter one is used. Discovery contains the important moments of the creation of something new: one may think of mining, bringing the ore above ground (as in data mining), but also of the discovery of the hidden meaning of something.

References:

- Paul, G. L. – Nearon, B. H. (2006): *Meet the New Rules*.
Hedges, R. J. (2007): *Discovery of Electronically Stored Information*. BNA Books.
Race, T. M. – Makri, S. (2017): *Accidental Information Discovery. Cultivating Serendipity in the Digital Age*. Elsevier.
Kerne, A. (2008): An Experimental Method for Measuring the Emergence of New Ideas in Information Discovery. *International Journal of Human-Computer Interaction* 5, 460–477.
Hristidis, V. (2010): *Information Discovery on Electronic Health Record*. Chapman & Hall CRC.

Disinformation

~ deliberately constructed deceptive, misleading content; an interpretation or falsification of reality that is advantageous for the publisher, presented to the recipient as ascertained and controlled information, and made believable in order to achieve an effect.

Expressions used with the same, or very similar, meaning: lie, hoax, misinformation, misleading, false information, fake information

Antonym(s): perfect information

Expressions from related concepts: information games, information politics

Which category? A phrase with a base in epistemology.

The phrase in the language system is stably rooted, its everyday meaning covers the professional one completely.

There is a sort of unspoken agreement in the literature that this phrase, that had been first used for newfangled types of deception before the Second World War, covers types of activities that had been used abundantly in earlier eras of social history, as well, especially by opposing military parties. From the military vocabulary, it entered the political one (representatives of power giving their own citizens misleading information), then discourses related to mass press, media, television, and finally the Internet, often exaggerating the rate of disinformation in the entirety of information, and consistently mixing it up with ‘information mess’.

This is how the phrase ‘disinformation society’ could come about, often used in complete misunderstanding of the concept of information society by shallow publicists, and even respected scientists attempt to have it accepted as a strong social science term (Marshall, 2015).

Really, in itself, by wanting to place the categories of lie, inaccuracy, distortion, inadequacy, and obsolescence correctly in the epistemological sense, a serious classification-interpretation work is needed (Fallis, 2009), especially in the relationship of disinformation vs. misinformation. Ádám Makkai, the respected Hungarian-American writer, attempted to define this in his dissertation ‘Idiom Structure in English’. In his view, deliberate disinformation occurs when the recipient can decode the message content and considers it lexically correct, but regardless, it is not so. On the other hand, if the recipient decodes the received information in an incorrect manner, and that’s why it becomes erroneous, we have misinformation.

EVALUATION AND RECOMMENDATION: The phrase is clear and well known, but for information-conscious citizens, being sensitive to fine differences between similar expressions is also important.

References:

- Fallis, D. (2009): A Conceptual Analysis of Disinformation (Conference paper)
<https://www.ideals.illinois.edu/handle/2142/15205>
- Marshall, J. et al. (2015): Disorder and the Disinformation Society: The Social Dynamics of Information. Networks and Software Routledge.
- Makkai, A. (1972): Idiom Structure in English Mouton. The Hague.

Information dissemination

~ the sub-type of information transmission or information communication when one sender methodically sends one piece of information or a bigger unit made up of multiple pieces of information to multiple end points.

Expressions used with the same, or very similar, meaning: information multiplication

Antonym(s): information retention, encryption

Expressions from related concepts: information flow, commercial, marketing, propaganda, informing

Which category? For the process, it is an everyday term, but where diffusion is technology-heavy, it is used as a technical term.

The phrase in the language system did not become more loaded as depending on the channel and information content, numerous alternative expressions exist that can be used to refer to the process of spreading.

The town crier used to be the end point of an information dissemination machine: he, along with his colleagues in other towns, made sure that information sent from the royal or public administration centres got to every planned end point. Calendars used to serve the same purpose, for example, as through these publications pressed in a high volume, numerous pieces of information that are considered basic could become common knowledge.

Broadcasted solutions appeared in addition to distribution-based solutions. In the second half of the 19th century, earlier educational healthcare and market information dissemination methods were joined by the channels and diverse practices of scientific information dissemination, this was followed by the information provision and distribution activities of specialised propaganda organisations.

By mechanizing libraries, library data provision was also born, this was still called information dissemination, as a library generally was in touch with many users (including professional ones). (They have an independent journal to this day: the International Journal of Information Dissemination and Technology, IJIDT). With the expansion and mechanisation of the information industry, information regarding the planning and operation of effective machine information dissemination systems came to the fore. For some specialised information services, end points are not individual consumers, i.e. the population, but companies – for example, in the case of market information dissemination (MID).

In the Internet age, content with an important public information dissemination became more valuable. Such as news regarding epidemics, pests, preparation for extreme weather conditions.

EVALUATION AND RECOMMENDATION: One can talk about the disseminations of various types of content (scientific results, lifestyle practices, public interest news, etc.) without using the superfluous ‘information’ attribute. The expression also makes sense used as an umbrella term, however, situations that present an option for that are relatively rare (these may be an information science description that includes technology-related, historical, and theoretical parts).

References:

Guidelines for Information Dissemination. Institute of Museum and Library Services
<https://www.imls.gov/about-us/policy-notice/guidelines-information-dissemination> [2016-04-21]

Information distance

~ generally a measure created by the comparison of information objects. In a special sense, numerical data that expresses the co-transformability of two computer files, measured in bits. The distance in this sense is the shortest programme that can be used to transform one of the files into the other or vice versa.

Expressions used with the same, or very similar, meaning: –

Expressions from related concepts: minimal description length

Which category? IT technical terminology with a textbook meaning, but its use is common in the literature of other formalised systems, as well.

The phrase in the language system appears virtually exclusively in a computer programming environment, and even there, only sporadically.

For formal system, the expression ‘information distance’ has long been used for the difference between the object of interpretation and the interpretation of the interpreter. For example, for recognising an image, this means the distance between information from the environment and the related pieces of information of the sought set, which can also be seen as a signal/noise ratio (in our case, the smaller the information distance is, the harder it is to identify the set). Information distance that measures the level of relatedness of two information sets entered the armoury of science metrics (for example, organising the number of periodicals that can be cited and the actual number of citations).

Then, a number of years before the Millennium, an use that is more constrained than any earlier has started.

In the Kolmogorov complexity theory, created in the mid-60s to define simplicity in a mathematical way, there is a solution to finding the shortest distance between two objects. As in the computer space, the equivalents of physical objects are files, software researchers started to consider them objects. Therefore the distance between files was described not with spatial data, but with 1s and 0s, the elements of the language of computer science, the binary system. Accordingly, information distance is not a physical, but a logical, or rather, operational one: the distance between two files can be expressed by the shortest programme that can turn a simple file into the other one.

In order to be able to tell the distance not only between simple files, but between e-mails, images, videos, etc. stored on the computers, scientists have created a more complex formula, the Normalized Information Distance. They make the studied subject presentable using compression algorithms, and then, their distance may also be measured. The role of Paul Vitányi, a Hungarian-born researcher who

lives in the Netherlands is imprescriptible in the development of the methodology. Typically, the concept of information distance they created is applicable to all sets that may be processed using algorithms. (E.g., the phylogenetic family trees of various species were generated based on mitochondrial DNA, where information distance represented genetic distance.)

More recently, it has been used at the intersection of geography and economy, to help understand the formation of information asymmetries. It is used to express how the information distance between market operators grows in proportion with the physical distance (but calculation of costs in proportion with distance, for now, seems to be a hard shell to crack).

EVALUATION AND RECOMMENDATION: Understanding the concept requires mathematical skill and abstractional ability. Various scientific fields use it to measure the relations between somewhat similar, but a little different information objects. However, the distance between these uses is growing: as more and more new fields enter, the chance that the meaning, already held together by the force of analogy, will ‘blow’, and fall apart into three or four new, specialised meanings, with independent definitions and names.

References:

- Vitányi, P. M. B. (2011): Information Distance in Multiples, *IEEE Transactions on information theory* 4: 2451–2456.
- Vitányi, P. M. B. et al. (2009): Normalized Information Distance. In: Emmert-Streib, F.- Dehmer, M. (Eds): *Information Theory and Statistical Learning* Springer, 45–82.

Information distortion

~ the unwanted changing of information during recording, storage, or communication. If it is intentional, it is called information distortion.

Expressions used with the same, or very similar, meaning: information loss, information deficit

Antonym(s): identical information transmission (that keeps its identity)

Expressions from related concepts: manipulation, communication noise, disinformation, false information

Which category? Although there was an experiment to make it into a technical term in the late 90s, its everyday meaning is still definitive.

The phrase in the language system is stagnating.

Information, once born, will always make a connection between two minds, regardless the length of the path it takes. In the meanwhile, it necessarily passes through innumerable possible channels, and according to experience, content is often damaged, the carried meaning changes, or part of it is lost while it gets to the end. Occasionally, no one is disadvantaged functionally despite the considerable changes – content proves practically transmittable despite the distortion of information.

In other cases, a small distortion may also have catastrophic consequences.

We often encounter phenomena that is considered information distortion in our everyday lives. These distortions may have multiple reasons. Occasionally, the recipient simply misunderstands something, various irritating environmental factors, such as noise sources may occur, or the language (or code) of information that the parties use may differ. The message may also be complex, ambivalent, or plurivalent.

Intentional distortion also has a long cultural history, from the world of slander and intrigue that poisoned the lives of small communities to disinformation made industrial in military history.

The scientific study of the phenomenon started, understandably, in organisational sociology, with the empirical research into the information processes of large corporations. A pioneer of this field of research, Charles O'Reilly came up with the attempt at a strict definition of information distortion as “the incorrect reproduction of objectively correct information”, and correctly identified both intentional distortion and subconscious manipulation in pieces of information travelling upstream in the company hierarchy (O'Reilly, 1978).

EVALUATION AND RECOMMENDATION: Although the idea is used by both statistical physics and information theory (for signs, not information), and although it also appeared in economic science as a strong term, the use of these is sporadic. However, everyone understands its meaning in the everyday sense when the expression is said or written down somewhere.

References:

O'Reilly, C.A. (1978): The Intentional Distortion of Information in Organizational Communication. *Human Relations* 31 (2) 173–193.

Information diversity

~ the possibility of utilising the widest possible spectrum of information available regarding a certain subject, and in an interpersonal or intergroup space, the proportional distribution of available information between stakeholders.

Expressions used with the same, or very similar, meaning: information distribution

Antonym(s): information asymmetry, information bias

Expressions from related concepts: information group, information flow, information community

Which category? The everyday wisdom (it is nice to have a diverse information environment) is expressed with a different grammatical construction, but as a technical term, it has a history of use looking back decades.

The phrase in the language system is popular on multiple points of social sciences that operate with formal tools

Diversity of any kind of information is a good recipe according to most authors. The more points of the information space one has input from for a given reflection or decision, the more sure-footed use can be.

For decision theory (Iselin, 1988), diversity is the maximisation of relevant information that may be included in decision preparation, and their necessary abundance, and use is similar for predictions of statistical probability. However, for actors in economic-trade information games (Figlewski, 1982), the important aspect is whether the given information set is distributed and shared appropriately – because it can be proved and justified that in this case, the market is more efficient, and so is the number of positive externalities (Goldstein and Yang, 2015).

Social network theory combines the two approaches and seeks whether online communities connected by communication relationships are truly closed information groups, or if there is space for information diversity. Bakshy's (2012) ingenious Facebook research proved that consumed information is much more diverse than any earlier knowledge or preconception could suggest – and this is traced back to the fact that information flows through many so-called 'weak ties'. (In the other direction, this means that those who only keep in touch with people with 'strong ties' are more likely to make their own information sets poorer.) Regardless of the approach we choose, information diversity is clearly a value, and decreasing diversity leads to failures and biasedness. This is why it is so important to be able to access the power of legislation, law, and public speech

(these important ‘gatekeepers’) where search algorithms, political, business, or ideological ideas artificially decrease diversity (Helberger, 2015).

EVALUATION AND RECOMMENDATION: We may hope that the phrase finds its way out of the expanding literature to the heart of everyday Internet users and becomes more popular. One chance for this would be making it part of information literature modules in school materials.

References:

- Iselin, E. L. (1988): The effects of information load and information diversity on decision quality in a structured decision task *Accounting, Organizations and Society* 13 (2) 147–164.
- Figlewski, S. (1982): Information Diversity and Market Behavior, *The Journal of Finance* 37 (1) 87–102.
- Goldstein, I. – Yang, L. (2015): Information Diversity and Complementarities in Trading and Information Acquisition. *The Journal of Finance* 70 (4), 1723–1765.
- Bakshy, E. (2012): Rethinking Information Diversity in Networks. January 17.
<https://www.facebook.com/notes/facebook-data-science/rethinking-information-diversityin-networks/10150503499618859/> [2016-03-26]
- Helberger, N. et al. (2015): Regulating the new information intermediaries as gatekeepers of information diversity *Digital Policy, Regulation and Governance* 17 (6) 50–71.

Information drought

~ the blockage of information channels, issues, lack, or cessation of information supplies, an agonizing, unfulfilled desire for certain pieces of information.

Expressions used with the same, or very similar, meaning: information dearth, information poverty

Antonym(s): information richness, information glut

Expressions from related concepts: (worldwide) information inequality, information asymmetry, information deficit

Which category? An everyday expression created again and again to attain stylistic effect.

The phrase in the language system appears occasionally, it has no tradition on its own, people aren't thinking about the expression itself.

The possibility of the vital information we thirst for suddenly running out is like a river that dries out. It is like a natural disaster (Kranich, 1989), especially after a rainy season of information glut (Warren, 1992). It typically is a base feeling and visual world that may be re-discovered again and again, when the different information problems of different actors occur.

Its first use we know of was fearful for American farmers in that if they have issues converting to the use of new information technologies, the channels that carry information necessary for production would slowly dry out (Kranich, 1989). Later, they noticed how extremely researchers from developed countries were separated from scientific information (Warren, 1992, Jeevan, 2000). New Zealander journalists used it in the title of a report made in East Timor in 2007, as locals experience the isolation from their "mother islands" as an information drought. The turn of phrase was used in the 2011 hunt for Bin Laden, as it happened in such an information-poor environment.

All this signifies that it is a mere linguistic invention, many use the metaphor offered up, but without adjusting the meaning to its real content. Use could have a strong relevance in situations in which it is used to represent not only a painful lack of information, but the situation created because of the termination of a previous rich and colourful information supply.

EVALUATION AND RECOMMENDATION: All the attributes of drought and lack of information rarely overlap completely, and there is no painful need for a new phrase that covers an extreme situation of lack of information along with the more diffused information dearth. This is also true regarding 'information desert',

used in other texts. Of course, all this may be realised if information drought can grow roots.

References:

- Jeevan, V. K. J. (2000): Information drought in research: an Indian perspective. *Library Review* 49 (3), 112–119.
- Warren, K. S. (1992): Information deluge and information drought. *Scholarly Publishing* July
<http://www.utpjournals.press/doi/abs/10.3138/JSP-023-04-223?journalCode=jsp> [2015-03-26]
- Kranich, N. (1989): Information Drought: Next Crisis for the American Farmer? *Library Journal* 11, June 15. 22–27.

Information dynamics

~ inanimate, living, and artificial systems are all in contact with their environments and create a permanent balance using a complicated inner regulation – they are dynamic. All this is actualised through information processes that work as control, feedback, and regulation processes, ‘circuits’. These connections prevail in a special class of systems, information systems, thus with the appropriate techniques, system efficiency can be improved.

Expressions used with the same, or very similar, meaning: information physics

Expressions from related concepts: information system, information actions, information flow

Which category? Scientific term used in a small scientific circle, in separate bubbles.

The phrase in the language system is used by few even in the given disciplines, everyone attempts to translate it to their own language. There is no effort to create an independent information dynamics theory, thus the concept as an object is not considered often, it is only used.

Information dynamics (ID) is an approach that has borders with multiple scientific fields, thus the behaviour and functioning of dynamic systems may be modelled, and through better understanding, their efficiency may be increased.

It was introduced by concentrating the dictionaries of thermodynamics, evolution theory, and information theory in the early Nineties. American zoologist Stanley Salthe (1993, 2001) created the term as a portmanteau of the words ‘information’ and ‘thermodynamics’. He started from the idea that entropy, organisation and disorganisation, energy input and output can all be interpreted for information systems – e.g. the aggregation of information variables also increases the degree of freedom of decisions.

The concept – regardless the insecurities around it – has broken out from the cage of the mathematical-statistical-logical information concept, and it is now used in multiple fields: in linguistic, cognitive science environments, then in ecology and economic theory literature. In the meanwhile, the abstract mathematical concept of information has been mixed with the social science theory of information.

When we read about information dynamics being a tool or method to increase marketing management of information between customers and companies, and inside the company network, by the integration, simulation, and analysis of in-

formation processes, it is easy to see that we have come a long way from thermodynamics: the viewpoint is cybernetic, but the defining characteristic is not the quantity of information, but their quality.

EVALUATION AND RECOMMENDATION: Whether a strong scientific theory will build upon information dynamics seems undecided so far. Also, we do not know whether the unified theory of information has a chance of “making peace” among mathematical and neuropsychic worlds of information that are used in varying meanings. Thus we may only claim that the fate of the concept is open, bound to the results of more generic scientific discourses.

References:

- Salthe, S. N. (1993): Development and evolution: complexity and change in biology. MIT Press, Cambridge, Massachusetts, USA.
- Salthe, S. N. (2001): What is Infodynamics? In: Understanding Complexity: a Commemorative Volume of the World Congress of the Systems Sciences and Isss, Springer, 2000, Toronto, Canada.

E

Information ecology

~ humanity's relationship with the surrounding information environment.

Expressions used with the same, or very similar, meaning: information ecosystem

Expressions from related concepts: information management, information organisation, information specialists

Which category? Its introduction was attempted as a name that identifies a specialist field, with moderate success.

The phrase in the language system is present with an insecure meaning, its substantive value is small, its weakening is expected.

Information ecology is the relationship of humanity and its information environment, their mutual way of existence – or, to be more exact, the scientific approach that investigates this topic. The expression was created and made into a book title by two notable information management experts, Thomas Davenport and Laurence Prusak in 1997. They primarily intended to underline the turn in approaches, that it was time to go back from computers and an engineering approach to information itself in company organisations: to the human side, that should be prioritised in comparison with the machine one.

With an information ecology view, information environments (and information strategies, behaviours, and cultures) can be better understood and developed. However, Davenport and his co-author only created a bombastic expression that has little to do with the actual science of ecology. Instead of transferring ecological models to the corporate ecosystem ('cultural ecology' had failed to do this earlier), they only did so with a couple of analogies. In their view, cognition does not serve adaptation, instead, it serves the mastering of the information environment.

Library science also had a similar experience with information ecology. It asks questions such as what libraries can contribute to the improvement of the information environment, more efficient information obtaining, spreading information literacy, and decreasing information stress. Again, it is not ecology that is being applied: the expression is chosen to make new, more holistic, organic, and systemic approaches more 'consumable'.

Nahl's model (2007) is considered the most successful; along with the cognitive (psychosocial) side, he also included the emotional (affective) side in his analysis, as the dynamic interaction of these two factors is required to finish tasks successfully in any information environment (including symbiotic man-machine relationships).

EVALUATION AND RECOMMENDATION: ecology is mostly used in a rhetoric function when it is used in a conceptual structure. This is the basic source of insecurity, because of which these attempts at word creation and application were deemed to fail.

References:

- Davenport, T. H. – Prusak, L. (1997): Information Ecology. Oxford University Press, 288.
- Malhotra, Y. (2002): Information ecology and knowledge management.
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.7.6732&rep=rep1&type=pdf> [2015-07-28]
- Nahl, D (2007): Social–biological information technology: An integrated conceptual framework. *Journal of the American Society for Information Science and Technology* 58 (13), 2021–2046.

Information economy

~ the information sector of economy. Information and knowledge production and supplier companies, their products, market, technology, workers, and consumers.

Expressions used with the same, or very similar, meaning: information sector, information industry, information and knowledge economy, information factory, symbolic economy

Antonym(s): traditional industry

Expressions from related concepts: information goods, information services

Which category? An economy science term, with strong everyday use.

The phrase in the language system is stably present, and the scope and field of the economic segment that belongs to the concept is subject to continuous debate.

Austrian-born American economist Fritz Machlup was the first to create a separate industrial category for information industry in his early 60s work on the production and division of knowledge. He classified it into five sectors: education, media and communication, information technology, information services (e.g. law, insurance), and other information activities (research, development). He measured the place of the information sector inside the entire economy by the GDP contribution of these sectors.

Marc Uli Porat's 1976 publication may be considered the descriptive foundation of information economy. Porat created an even more detailed "roadmap" of the field, with an interconnected system of definitions and measurement opportunities. His attempt at summarising the internal structure of the information sector proved the most enduring, with the introduction of the categories of the primary and secondary information sectors. Porat named the sectors where production is aimed directly at the production and output of information goods the primary sector, and (controversially), he considered the ICT sector, companies that construct the devices of information management, to be part of this. He considered the internal, intra-organisational information production and supply activities of non-information companies whose output is not information the secondary sector of information economy.

Porat's output-based system proved to be appropriate to insert information economy into the current sector-related logic, but as of today, there is no convincing, generally accepted description – only exciting experiments.

There are classifications built up from the direction of the activities that belong to the information sector: knowledge production, information division and communication, risk management (insurance and finances), market research and

marketing, information processing, information appliance production, government activities, management, and finally, the sector's infrastructure (buildings, maintenance). Others classify the various sectors based on the cycle time of information activities. Accordingly, the sector is classified into long-range (education, public education, R&D) and short range (operative, management and coordination-related activities) information activities.

Information economics is the science of information richness.

EVALUATION AND RECOMMENDATION: Information economy is a stable and accepted technical term, regardless of the fact that its internal classifications are subject to constant professional debate.

References:

- Machlup, F. (1962): *The Production and Distribution of Knowledge in the United States*. Princeton University Press, N. J.
- Porat, M.U. (1977): *The Information Economy: Definition and Measurement* US Dept. of Commerce. Washington D. C.

Information ecosystem

~ if, when analysing living systems, we consider the complete, interconnected relationships of living beings and their inanimate environments the ecosystem, as an open system capable of a certain amount of self-regulation, the information ecosystem is the complete interconnected network of societal actors and their information environments.

Expressions used with the same, or very similar, meaning: information universe, information environment, information flow, information landscape, infosphere

Expressions from related concepts: information management, information organisation, information specialists

Which category? Its introduction was attempted as a name with great explanatory power for a complex group of phenomena as a subject of research.

The phrase in the language system is present with an insecure meaning, its substantive value is small, its weakening is expected.

The outlines of human communities are much more complicated than an ecological system that may be modelled by circular processes, as behind the seeming homogeneity and basic distribution of societies and social groups, there are very complex information community structures, the meaning of which is actualised when the identical or different nature of decisions and actions need to be understood and interpreted.

In the information ecosystem (much like the infinite cycle of biological ecosystems) there is not a minute of pause: freshly attained information is ceaselessly transformed, depending on the situation, the meaning transfer, and the new content it encounters to take up new patterns, high-level information sets in people's heads. The end points of 'information chains' may still be new actions in reality. These, again, start information waves, and based on the nature of the situations and the number of stakeholders, they enter a communication channel that ensures some type of transference.

Information ecosystems may also be approached from the direction of their constituents. Among the actors, we may find every individual person, as nodes of information flow, including, of course, ones of exceptional importance, that may be considered important from a network viewpoint. Formal economic, political, and cultural institutions that vocationally affect the information flow, or contact it, are also actors. Artefacts are devices and technologies, the meaning and function of which are provided by the support of possible sign actions: the objectification

of information, moving it from mental content to a physical carrier, the multiplication, transformation, transferring, and distribution of information stored or transferred in a signal state. Their interconnected megasystems make up the information infrastructure. Content flowing in the information ecosystem connect actors to artefacts. On channels, that are – in their nature and subject – identical, very varied pieces of information may travel, with innumerable types of functions. All content enlarges both the information set of actors and expresses – to some extent – control structures that define, or affect, the alignment systems and local values that newly embedding knowledge elements gain meaning.

We found the first occurrence of information ecosystem in Knute O. Berger's work (1989). According to Nardi and O'Day (1999), the information ecosystem is characterised by four main information characteristics.

- Interdependence: the ecosystem actors make up each other's information environment, are mutually dependant on each other; their results often depend on information exchange efficiency.
- Change: information, in its flowing and fixed forms, is constantly subject to change, transformation, damaging, and exchange: its direction and characteristics are in movement.
- Time constraints: every piece of information has one or more relevant temporal references, and the flow may always be mapped on the time axis. The value of information may increase or decrease (appreciate or become obsolete).
- Differentiation: For information-management communities, the differentiability of the various pieces of information is hugely important, as these carry (novelty) value compared to each other.

EVALUATION AND RECOMMENDATION: As by today, every, previously separate medium is melting together in the on-line space, 'digital ecosystem' (an innovation of Carly Fiorina, the humanities degree-holding leader of information technology megacorporation HP (Fiorina, 2000)) is forcing information ecosystem out of contemporary information technology literature. We believe that the concept can live on if it finds its place in a comprehensive information anthropology model instead of its current technology-focused use.

References:

- Stalder, F.: Information Ecology.
<http://felix.openflows.com/html/infoeco.html> [2010. 05. 19.]
- Fiorina, C.: The Digital Ecosystem.
http://www.hp.com/hpinfo/execteam/speeches/fiorina/ceo_worldres_00.html [2014. 05. 22.]
- Berger, K. O. (1989): The Information Ecosystem. Putting the promise of the Information Age into perspective. In Context, 21.
<http://www.context.org/iclib/ic23/berger1/> [2014. 05. 22.]
- Nardi, B. A. – O'Day, V. L. (1999): Information Ecologies – using Technology with Heart. MIT Press.

Information efficiency

~ in stock market economy, the index of the value increase of information built into the price of the share. In other words: the measure of how accurately market prices reflect information regarding the product, and as such, its real value.

Expressions used with the same, or very similar, meaning: –

Antonym(s): information loss

Expressions from related concepts: information surplus, information ratio, lack of information

Which category? An accurately defined financial term.

The phrase in the language system is almost exclusively present in the financial context, it is experimentally used on occasion in other fields, but only building upon the everyday meaning of efficiency.

American economist Eugene Fama created the hypothesis of efficient markets in 1991, claiming that the market works efficiently if companies include received information in stock prices immediately. Information efficiency is the same definition approached from the side of information; i.e. information is efficient if it is included in the price of the share at the moment of issuing the share. If this does not happen, market speculators are capable of achieving a higher income exploiting the opportunities of the lack of information.

Therefore information efficiency is highly dependent on its adaptability to information. Three levels are differentiated based on the success of this adaptation.

If current stock prices reflect all the information of past price movements perfectly, the result is that future price changes should not be foretold based on the analysis of past price changes, as every actor knows them. On the second level, not only past, but current, public information is also available. In this case, there is no benefit in analysing information, as stock prices may reflect not only earlier market prices, but present ones, as well. In the third case, share prices not only publicly embody past and present information, but private market prices, as well, resulting in a perfectly information efficient state.

Outside the world of finance, information efficiency measurement was attempted in other fields, as well (scientific information networks by citations, marketing strategies by the number of those reached by the spreading messages), but there is no cross-over between the various methodologies.

EVALUATION AND RECOMMENDATION: We often experience that a piece of information causes changes in a processing system. However, measuring this change

is different from determining or measuring the efficiency of information. This question is only asked in an information context in the financial field. Use of the concept in any other environment is perplexing and misleading.

References:

Williams, L. V. (2005): Information efficiency in financial and betting marketet. Cambridge University Press, New York, 5–11.

Information elite

~ in a narrow sense, the few who have the best access to information resources, leading to the greatest information benefits, and having the greatest influence in shaping the information ecosystem. In a wider sense, everyone who, because of their professions and abilities related to the information universe, form a sort of 'vanguard' of information management compared to other social groups (librarians, journalists, information advisers, information entrepreneurs, data specialists, web content creators and managers).

Expressions used with the same, or very similar, meaning: digerati, cyber elite, cyberdeck elite, Masters of Code, information aristocracy

Antonym(s): information underclass, Netslaves

Expressions from related concepts: information economy, information superiority, information inequality

Which category? An everyday expression that, after a while, may also enter the professional vocabulary of social analysis, that, for now, is frequently used in texts critical of contemporary information society.

The phrase in the language system is stable and present, sometimes in a stricter, sometimes in a looser sense, occasionally even in an undefined sense.

The dictionary compiled by information society course students of Corvinus University define the information elite as the following: "A group at the extreme end of information society based on information capacity, that has an almost limitless access to information and turns it into a social advantage". Others say that "only those with economic and information privileges can access information systems".

Undeniably, there are considerable differences in the access to information resources, and of information competences, and it is true that traditional social and economic benefits are typically transformed into information benefits or superiority, while the other way around is also open: information success may be turned into economic and social ascent. The question is whom we consider members of the information elite, and based on what criteria. One side of this spectrum, seeing the democratising effect of information, assumes an information elite that gets bigger and bigger, who will be able to properly use generalised information literacy and the shared information infrastructure.

On the other end of the spectrum, digital conspiracy theories are born: according to their believers, less and less people gain more and more power using their secret influence over information megasystems (the so-called "Illuminati of the

Internet”). The contraction ‘digerati’ (digital+literati, later also: info-rati) is also widely used as the name of the small cyber elite.

Regardless of contemporary debates, it is today clear for historians that, based on the differences in the accessibility of information goods, information elites existed in every era. Wandel (1995), for example, examined the structure of relationships between the meanings of images and actions, and their differences regarding ordinary 16th century people and the information elite. Among the reasons of the development of the British Industrial Revolution, more and more authors recognise the 18th-19th century clubs and communities created for intellectual conversation that formed an innovative information elite by sharing knowledge.

EVALUATION AND RECOMMENDATION: We must judge interpretations that perceive the information elite as members of a new ruling class, with class society phraseology, as opposed to the uninformed oppressed, to be incorrect. The words ‘info-rich’ and ‘info-poor’ cover this difference fully. However, we see no problem if someone uses ‘information aristocracy’ instead of ‘information elite’.

References:

Wandel, L. P. (1995): *Voracious Idols and Violent Hands. Iconoclasm in Reformation Zurich*, Strasbourg, Basel, Cambridge University Press.

Information empire

~ a business or political force that keeps definitive information transfer channels, media, or data stocks in single control and management, and through this, acquires remarkable influence.

Expressions used with the same, or very similar, meaning: information power
Expressions from related concepts: information factory, information richness, information superiority

Which category? Although the phrase primarily appears in political science and internet sociology texts, it is not a scientific term, but a stylistic expression used for phenomena that may also be identified in other ways.

The phrase in the language system rolls over more and more things with its meaning unchanged – signalling that changes occurring in reality are confirming the validity of this conceptual innovation.

After the great press empires formed in the first half of the 20th century (Hart, 1981), telephone, radio, and television all suffered the same fate. Their independent workshops banded together into bigger and bigger conglomerates (PLCs, cartels, ad hoc alliances, monopolies) because of business and cost efficiency reasons, and information empires were the company empires working in the information business.

From the second half of the 90s, the newly opening world of the Internet was referred to as the information empire, primarily because of its huge size and diversity, and not because of the dimension of control. This held true until a powerful essay by Mark Poster pointed out that in the time since the dissolution of the Soviet Union (and after 9/11), the United States itself has become an information empire (Poster, 2004). This interpretation remained the dominant one until generational companies with a disturbing concentration of information started to appear on the Internet (that had, in its 'golden age', been not-for-profit and open access): Microsoft, then Apple, later Google, and most recently, Facebook evoke the image of a more and more threatening information empire. The source of fear is that information superiority can easily turn into observation, hindering freedom of expression, and states of dominance may stop engineering innovation.

These deductions are from the successful book of Tim Wu, professor at Columbia University, written about information empires (Wu, 2010). The rise and fall of the great American information empires of the 20th century (the telephone-monopoly, cable TV, or Hollywood's entertainment industry) offer a range of examples and analogies as to how the key medium of the present, the Internet can become prey to business and political traps. There is no doubt that many charac-

teristics of an empire are plain to see; luckily, the counterbalances that may be able to stop unwanted scenarios also exist.

EVALUATION AND RECOMMENDATION: The dynamics of reality and the development of meaning points to the direction of an increase in the use of the concept.

References:

- Hart, J. R. (1981): *Information Empire: Rise of the „Los Angeles Times” and the Times Mirror Corporation*. University Press of America.
- Poster, M. (2004): The Information Empire. *Comparative Literature Studies* 41 (3), 317–334.
- Wu, T. (2010): *The Master Switch: The Rise and Fall of Information Empires*. Alfred A. Knopf.

Information engineer

~ an expert performing the high-level engineering tasks of the function and use-sensitive planning, analysing, designing, and implementation of information applications.

Expressions used with the same, or very similar, meaning: database designer, data wizard

Antonym(s): information technologist

Expressions from related concepts: information architecture, information expert, computer scientist, information logistics expert

Which category? An information science and IT term for a recently identified type of knowledge.

The phrase in the language system has not really escaped the world of higher and adult education, although it appears in more and more job advertisements.

The ‘father’ of the concept is Australian Clive Finkelstein, who, in five years (between 1976 and 1981) made the world accept that a mediating expertise is necessary between strategic business design and information systems. He called this information engineering.

The world of business (especially the financial sector, a leader in the use of new IT solution) felt more and more that those who know business information needs cannot plan to exploit the choices offered by the ICT toolkit, while IT experts (hardware, software, and system experts and operators) are not capable of planning solutions knowing the value and necessity of sector specific information.

Thus as architects perform their work with bridges and buildings, mechanical engineers, with mechanical constructs, and electrical engineers, with electronic instruments; in this analogy, new generation specialists can be expected to be able to plan, construct, test, and implement information systems considering business and technology viewpoints. It is no accident that a sub-class of information engineers responsible for the high-level editing of websites received the name ‘information architect’. And neither is that most information engineering challenges are transmitted by the world of Big Data: the tasks of the way, processing points, storage, search, and making them applicable for high level knowledge operations that retrieves information of the massive amounts of information.

In advanced education, the information engineering and the (even more comprehensive) information systems engineering knowledge fields are differentiated. (Majors from 2009 onwards at the Babes-Bolyai University in Transylvania.)

One must see the place of information engineers in the interconnected world of information experts. Compared to (information)technicians who build, oper-

ate, and maintain the systems where information is transmitted and processed, information engineers design sets, structures, and processes. However, they do not need to understand the world of information phenomena as deeply as information researcher in order to achieve this. The three tasks may mix, but there are basic differences in their natures.

We must add that information engineering in the above sense had existed way before the digital revolution, with more primitive information tools. The efficient and professional mapping of massive masses of data, invention of graphs or accountancy systems, the appropriate handling of astronomical data – or even the creation of a classification system or the periodic table – are all information engineering feats.

EVALUATION AND RECOMMENDATION: Although the appreciation of the expression is expected because of the ever-growing worlds of data, so many rival concepts have been and will be created that its fate is hard to foretell. Its use in the above sense is highly recommended.

References:

Finkelstein, C. (1989): *An Introduction to Information engineering: From Strategic Planning to Information Systems*. Sydney, Addison-Wesley.

Information enthusiast

~ an addict of the positive passion that drives behaviour towards joy derived from information activities.

Expressions used with the same, or very similar, meaning: information junkie, information hoarder, information religion, data lover, infoholic

Antonym(s): information Luddite, information avoidance, information blindness, information diet, infovegetarian

Expressions from related concepts: information omnivore, information Nirvana, information hunting, infogasm

Which category? A term usually used as a witty and self-deprecating self-description.

The phrase in the language system is well diffused, its occurrences are occasional and intended to be witty

A product of the world of short, spirited, attention-drawing self-evaluations and short profile description, in which those who insert it among their personal data shared with the world wish to refer to the strong desire to navigate in the information ocean and make themselves seem interesting. No exaggeration: a popular business social media site has its statistics on this, as well. Therefore the number of profiles of information enthusiasts is accurately known, as is the one they consider the biggest information enthusiast (LinkedIn, 2016).

And who frequent Mr. Shaggy's Library and Information Enthusiast Club at an international school in Malaysia (Fairview, 2016)? The students who are the most open to shared research experiences.

All this considered, internet enthusiasm is not a result of the Internet age. Numerous historians call devoted experts from the first decades of the 20th century who did a lot to create early information collections in their libraries 'information enthusiasts'.

EVALUATION AND RECOMMENDATION: Information enthusiast is a kind, slightly positive feeling and sounding term in the sea of alienating, negative expressions. We trust that its use will diffuse further and become more popular in other languages, as well.

References:

Information enthusiasts Group on LinkedIn:

<https://www.linkedin.com/title/information-enthusiast> [2016-05-20]

Fairview International School, Kuala Lumpur.

<http://fairview.edu.my/demo/index.php/pyp-ccas-2/253-library-and-information-enthusiast-club> [2016-05-20]

Information entrepreneur, infopreneur

~ a business operator who trades in information products and services.

Expressions used with the same, or very similar, meaning: cyber entrepreneur

Expressions from related concepts: information economy, information goods, information supply, information market(place)

Which category? Although the term is more than 30 years old, today, it is a popular term of network jargon.

The phrase in the language system is popular in its shorter form in English, and the long form in other languages.

The short version of the portmanteau word created from ‘information’ and ‘entrepreneur’, infopreneur was trademarked in the United States in early 1984, and, still years before the Internet explosion, a comprehensive book had been published on how new information products and services could and should be marketed in a cutting edge way using telephones, computers, and credit cards (Weitzen and Genda, 1991).

Information business on the Internet changed many things suddenly. As having even a website or a blog became enough to enter the market, starting a business became infinitely easy, and company law formalities were only required after a certain point, a certain level of turnover, decreasing not only the needed capital, but the level of risk, as well. Because of the on-line environment, spatial determinedness has disappeared (an infopreneur can live anywhere and work on their virtual shop from anywhere). Sub-tasks (development, production, marketing, dissemination, transaction and payment management, customer relations) that, in a traditional business space, would have required a specialist or an investment became easily doable. Numerous new gainful activities came to be that had not existed before. Ever since the biggest on-line platforms pay for creating content by the number of visitors, thousands of specialised experts have appeared: creators of videos, music, and educational content.

After a while, market advisers, investors, and government industry policies started to see the value in developing the innovation ecosystem that aids the creation of information enterprises and empowering young people to start independent businesses, practically with no initial capital. Numerous training and educational programmes have started at universities, and in 2004, the Infopreneurship Journal was launched – in Iran.

The on-line success of info-businesses also caused that the significance of information enterprises was portrayed as a quality only for the on-line environ-

ment in business guidebooks and definitions. Although – as Lahm and Stowe (2010) underline – we have seen limitless examples in the pre-internet, computer-telephone era, and even before, in the predigital world (for example, in early forms of information selling, using the post and letters as its medium the United States of the 1940s).

EVALUATION AND RECOMMENDATION: Information entrepreneur is a ‘two-level’ term: it means both that one enters the market with information goods and services, and also that all this is made possible by an exceptionally beneficial business environment, the information world wide web and electronic trade. If the use of the word refers to this duality, the expression may stably stay as part of the vocabulary for a long time.

References:

- Weitzen, H. S. – Genda, W. B (1991): Infopreneurs: Turning Data Into Dollars, John Wiley & Sons.
- Russell, D. (2016): Why Becoming An „Infopreneur” Is The Best Business Strategy For You Let Go. Break Free, February
<http://davyrussell.com/blog/escaping-9-5/why-becoming-an-infopreneuris-the-best-business-strategy-for-you/> [2016-05-23]
- Chandler, S. (2006): From Entrepreneur to Infopreneur: Make Money with books, E-Books and-Information Products, John Wiley & Sons.
- Lahm, R. J. – Stowe, C. R. B. (2010): An exploration of information entrepreneurship In: Ann, J. – Carland, J. (szerk): Proceedings of the Allied Academies Internet Conference, 12. Allied Academies, 53-56.
<http://www.alliedacademies.org/pdfs/paai-12.pdf>

Information erudition

~ the high-level sensitivity and awareness in the world of information culture that grows step-by-step at the actualisation of the abilities and skills that make up information literacy. The amendment of traditional sectors of education with the consumption and creation of digitally born and digitally accessible content.

Expressions used with the same, or very similar, meaning: information literacy, information competences, information proficiency

Antonym(s): information illiteracy

Expressions from related concepts: information culture

Which category? A term used in different meanings in discourses on information culture.

The phrase in the language system is often used as a synonym of information literacy.

Since 2003, librarian and pedagogue authors in the literature have often translated this skill set, previously called information literacy, as 'information erudition'. We had separated literacy, writing, and erudition before, as well. This latter one is used in two senses: as a personal cultural characteristic (when we call the unique complex of attained knowledge and skills that also affects one's behaviour one's unique erudition), and as a descriptive term of cultural science, where it is considered the entirety of cultural phenomena of an era of cultural history.

The difference between literacy and erudition is well demonstrated by the difference between the ability of writing and the high-level textual content created by literacy.

Or the difference between the ability to read and higher-level knowledge (literary erudition – this is where erudition comes from for the English version of the term). This is also the relationship between information erudition and information literacy. Information literacy means a standardisable ability to perform operations, while the concept of information erudition covers well-informedness, a personalised, autonomous order of information culture content, and the resulting critical potential. A reflection on digital culture itself. The ability to adopt a stance in the 'hot' issues of digital culture.

EVALUATION AND RECOMMENDATION: We suggest the use of information erudition in the sense of 'high-level, personal cultural quality built upon information literacy'. It is not to be confused with information culture, which is the complex,

comprehensive environment, in which we may follow the unique processes of growth and change of information eruditions. Where literacy and erudition are used in the same meaning, this differentiation is not necessary.

Information exchange

~ in its most generalised (anthropological) meaning, it means sharing intellectual content with another party or parties, but today, it is mostly used in IT as a term that simply implies bi-directional data transfer.

Expressions used with the same, or very similar, meaning: communication, information community

Antonym(s): information quarantine

Expressions from related concepts: signal transfer, meaning sharing

Which category? In its original form, a theoretical-descriptive term, in its modified meaning, an IT term that sees much everyday use because of its practical content.

The phrase in the language system is very well diffused.

The original meaning of information exchange is primarily important for researchers of information behaviour who want to learn about the structural changes that information sharing leads to in the basic information relationships of communities. Fast information exchange typically has a coordination function, it aids the coordination of actions (thus action efficiency is a measure of the success of information exchange). The end result of routine information exchange is that those who exchange their own information both increase their own stock of information and possess more shared content; this reinforces group cohesion. In diplomacy history, it is typically important because of the coordination function, in learning theory, it is used in the measurement of learning efficiency.

However, 99 times out of 100 occurrences of information exchange, it refers to machine information exchange: the computer-mediated communication of people (CMC), or data communication between machines. Mutuality here means only that information can theoretically flow in both directions on the electronic channels, but the phrase information exchange is used even when it only happens in one direction. The moment of 'exchange' does not recall past reciprocity: in fact, it means a changeover as a result of the physical movement of data packages.

The method and quality of information exchange is definitive in the operation and performance of every networked system, but it has the most at stake in giant organisations that handle huge amounts of data in real time. (Airlines, posts, traffic control etc.) The sensitive question of how much can, should, and is worth it to be automatized, which points of the information flow require human intervention and interpretation, and how and why should the flow pattern be centralised or decentralised. How much redundancy is justifiable.

EVALUATION AND RECOMMENDATION: Information exchange in a computer environment is really signal transfer, but the signals generally represent pieces of information. Thus its metonymic use is not problematic.

References:

Dodds, P. S. et al. (2013): Information exchange and robustness of organizational networks. Proceedings of the National Academy of Sciences 100 (21).
<http://www.pnas.org/content/100/21/12516.full.pdf> [2015-07-29]

Information explosion

~ the sudden, systemic growth of the amount of information that makes navigation between pieces of information impossible and causes a crisis in traditional storage and processing systems.

Expressions used with the same, or very similar, meaning: information deluge, information overload, information glut, too much information

Antonym(s): information implosion

Expressions from related concepts: information revolution, information society

Which category? Although this well-known metaphor is widely used in more or less the same sense, it is not a technical term: it may be part of numerous modalities without having to define its exact scope.

The phrase in the language system is firmly embedded, it will endure in the long term.

Although 90% of the literature connects the births of the topic to Alvin Toffler's book *Future Shock*, it had happened decades before. Major dictionaries had long considered two 1964 articles to be its first occurrence, but according to our current knowledge, it was first used in April 1961 by two independent sources: a biology researcher (at a conference presentation) and an IMB advertisement (in its appendix), and it had first occurred in the language of the press in 1941.

It was no doubt popularised by Toffler's book, immediately narrowing the meaning down to its negative message: the pain and suffering that the result of the information explosion, information overload would cause people. And as the computer-electronic revolution of the 70s-80s, the network revolution of the 90s, and the mobile revolution of the Noughties brought new 'waves of explosions' with themselves, predictions and reality keep on getting mixed together. Those for whom the incredibly fast, measurable growth of information emission, storage, transmission, and computing power meant the realisation of the prediction started to present Toffler's possible scenario as real. However, numbers, by themselves, are neutral in value. The basic question is whether processing systems can follow the explosive growth of the number of pieces of information to organise, search, and utilise. And despite some minor operational errors, no social subsystems produced signs of crisis because of their incapacity against the information explosion.

The distortion of moral panic was not balanced by the increasing number of dissertations and studies published from the 90s onwards that called earlier eras of social history the information explosion: book printing, the Carolingian Renaissance, or Hellenism. (Proving that challenges resulting from the quantity

of information have been overcome innumerable times in a creative, forward-thinking, culturally dynamic way.)

EVALUATION AND RECOMMENDATION: As the growth of the amount of information still seems exponential, the concept will likely stay in use for a long time. In discussions, one should strive to keep its use neutral and objective, so that it can stay away from the negative base interpretations of information overload.

References:

- Toffler, A. (1970): *Future Shock*. Random House.
- Fremont-Smith, F. (1961): The interdisciplinary discussion as a means to counterbalance specialization in the various fields of science. *AIBS Bulletin* 11, 17–20.
- Kubka, J. (1976): *Információrobbanás*. Interpress, Budapest.
- Stefik, M. (2000): *The Internet Edge: Social, Technical, and Legal Challenges for a Networked World*. MIT Press. 107–108.

Information extraction

~ the identification and collection of entries from unstructured texts and documents that contain information and data relevant to the given task.

Expressions used with the same, or very similar, meaning: information search, information collection

Expressions from related concepts: discovery, data mining, text mining, content analysis

Which category? Technical term

The phrase in the language system is, for now, is only used by a narrow range of experts

The origins of the concept may be traced back to the 1970s, when two American linguists, John Grinder and Richard Bandler, laid down the principles of neuro-linguistic programming (NLP). This controversial, but popular scientific school, attempts to construct the most efficient personalised communications techniques by a thorough examination of language use. In order to reach this goal, they started to rely on text mining, and, as a special case of that, information extraction, to use it in any profession that requires a high sensitivity to communication (politics, education, business, etc).

Information extraction in documents does not only serve the definition and localisation of relevant pieces of information, but also allows the collection of entire parts of texts with precise, narrow, preset search criteria, i.e. it creates structured information from unstructured information. Performing this work may be necessary in any area of life. Typical examples include news clipping and monitoring services, finding relevant information in programming log files, or medical document analysis. Its typical sub-tasks include recognising various elements of names (proper nouns, names of measurement units, etc.), that information seeking systems can allocate relations to, i.e. they can create a connection between the concerned actors (and the relevant events, concepts). These may include the identification of a product and its price, or a buyer and the name of the purchased product.

Text mining researchers pay special attention to information mining, as currently, that requires a huge amount of manpower, therefore with its full automatization, considerable time, work, and money could be saved. In the last couple of years, there were a number of successful attempts: the website 'Zoominfo' collects data on people, while FlipDog is an on-line job portal.

In recent years, the development of open information extraction has been more and more prominent; this aims to make performing successful operations not only in the tame gardens of databases, but in the infinite data jungle of the Internet, as well, a possibility.

EVALUATION AND RECOMMENDATION: The concept is a successfully created word. As valuable ores can be extracted from a large mass with various techniques, large, chaotic text masses can be turned into utilisable and organised information. Regardless of the changes and expansion of the background systems that can be used to extract information with more and more automatized methods, the expression itself will likely stay durable and stable.

References:

- Califf, M. E. – Mooney, R. J.: Relational Learning of Pattern-Match Rules for Information Extraction. Department of Computer Sciences.
- Piskorski, J. – Yangarber, R. (2013): Information Extraction: Past, Present and Future. In: Poibeau, T. (ed): Multi-source, Multilingual Information Extraction and Summarization, Springer Berlin Heidelberg, Berlin, 23–49.
- Banko, M. et al. (2009): Open Information Extraction from the Web. Department of Computer Science and Engineering, University of Washington, Seattle.

F

Information famine

~ the state and sensation of regions and communities suffering from a lack of information, information drawbacks, or an obsolete information infrastructure.

Expressions used with the same, or very similar, meaning: information deficiency, information deficit, information drought, information hunger

Antonym(s): information glut

Expressions from related concepts: information richness, information poverty

Which category? A term with a strong emotional plus compared to dry descriptive terms, balancing between everyday use and the public vocabulary.

The phrase in the language system keeps up its under-representation.

In the 1950s, exclusion from the globalising, more and more technology-based systems of information that is associated with economic-social disparities, but also added to their severity caused more and more problems for developing countries.

The term ‘information famine’ was created in 1957 to articulate this feeling by UNESCO to draw attention to the increasing rift between developed and information-poor, underdeveloped – primarily third-world – countries. As a result of this realisation, a new series of measures were implemented starting in the mid-70s in order to create a “New World Information and Communication Order” under the UNESCO flag (MacBride report, 1980). Concerned scientists and media policy makers keep on continuing their discussions, in the esteemed setting of the MacBride Roundtable.

In the following decades, UN, UNESCO, and other development organisations have made diverse attempts to help underdeveloped countries in building the bases of their information and knowledge infrastructures, opening doors to mass studying, literacy, and later (in the age of computers and the Internet), mass information literacy. However, despite all their efforts, the rift grows ever wider because of the increasing difference in development, the speed of technological change, and the difficulties of cultural adaptation. This information famine has not changed in the last half decade, Africa is still in the most difficult situation,

which is seen as one of the greatest obstacles of setting of economic growth and eliminating poverty (Tise, 2009).

In parallel, the concept of information famine, born out of the field of politics and communication theory, has been expanded to include a more comprehensive space. Colby (2008) recalls the rift between the number of scientific results and the possibility of involving them into preparing political decisions. Policy-makers want easily interpretable and immediately accessible results from science that can be easily translated to their own problems. Regardless of the supply being obvious on the production side, they lack usable information. And from here, the choir of info-sceptics (most recently Seife, 2014) who shape the doubtless presence of uncertain, baseless, misleading pieces of information in the information ecosystem into a decisive civilizational challenge is only a step away. Envisioning a cultural Apocalypse, they believe that in the middle of an apparent information glut, we thirst for real information that we cannot reach. When they want to present this Tantalean, distorted image in an even more scientific way, they create the Malthusian law of information famine, e.g. Seife: “information grows exponentially, but useful information grows only linearly”.

Disregarding the obtrusive question of how they measure the ratio of useful information in this information flood, the typical characteristics, tricky techniques, and para-scientific apparatus of the literature of moral panic.

EVALUATION AND RECOMMENDATION: The original meaning of the ‘information famine’ concept will stay relevant until the information scissors between the groups close. And we can laugh at the lazy prophets of an information famine that endangers the entirety of humanity.

References:

- Mc-Bride-jelentés (Új nemzetközi kommunikációs rend felé). UNESCO, 1980. Rövidítve magyarul: TK, 1983.
- Hamelink, C. J. (2002): Social development, information and knowledge: Whatever happened to communication? *Journal of the Society for International Development* 4 (5–9).
- Golding, P. – Harris, P. (1996): *Beyond Cultural Imperialism: Globalization, Communication and the New International Order*. Sage. 72–86.
- Seife, C. (2014): *Virtual Unreality: Just because the internet told you, how do you know it's true?* Viking.
- Colby, D.C. et al. (2008): Research glut and information famine: making research evidence more useful for policymakers. *Health Affairs* 4, 1177–82.
<http://content.healthaffairs.org/content/27/4/1177.long> [2015-11-21]
- Tise, E. (2009): *Isolation and Information Famine Stifling Africa's Growth* (Lecture text).
<http://www.library.illinois.edu/mortenson/lectures/2009/Tise-lecturetext.html> [2015-11-21]

Information fatigue

~ a medical-psychological term created as an analogy of chronic fatigue syndrome (CFS), to name Information Fatigue Syndrome (IFS) caused by the massive amount of hard-to-process information in a more easily recognizable way.

Expressions used with the same, or very similar, meaning: information overload, information stress, information asphyxiation, information strain

Antonym(s): information eating, information hoarding

Expressions from related concepts: information pathologies, information obesity

Which category? Its representatives would like to have it seen as a scientific term, but in fact, the expression is a failed attempt at an under-researched and misunderstood everyday type of information situation.

The phrase in the language system is meaningful only to representatives of certain subcultures, and in more comprehensive arguments, referring to the scientifically proven status of information fatigue that, by now, has become an urban legend.

Reuters asked 1300 CEOs and employees in 1996 about the personal consequences of information overload that they experience, and how they relate to their information environment that is getting harder to handle because of the new technological opportunities and the growing amount of business communication. The report, fittingly titled “Dying for Information?” quickly gained notoriety, as the results were echoed by the media as a distress call. Two-thirds of interviewees claimed that stress resulting from too much information made them anxious and dissatisfied, and also harmed their personal relationships.

43% said that they had to postpone important decisions because of the overload.

47% felt that the attention paid to information collection took energy away from their basic tasks, and 61% that they had to reduce their social activity.

Finally, one-third (!) claimed that they had developed health problem because of the information overload, and 60% claimed that they were too tired for their recreational activities because of the information overload.

A researcher in the study, British psychologist David Lewis felt that it was time to create a medical diagnosis: Information Fatigue Syndrome. At first glance, there seems to be much similarity between the symptoms of Chronic Fatigue Syndrome (muscular and joint pain, often severe mental and physical fatigue, depression, digestive issues, weak immune responses) and the results of information

overload (constant tiredness, mental problems, irritability, feelings of helplessness, physical pain). And even though Lewis only talked about the new illness as a suggestion, to be maybe utilised by clinical practice. However, the concept escaped its original area of validity, and started to roam the channels of public discourse along with the myth of information overload. It has been deforming discourses on the relationship of man and information environment ever since.

The original Reuters study was full of methodological errors, but Lewis also added many of his own. Lewis's concept of "information stress" is meaningless, as every stress situation is actuated through information processes (sensing, assigning meaning, processing, finding a response), and the feelings of stress and tiredness in the responders may be traced back not to "too much information", but to badly designed corporate processes. Too much information is not a prerequisite of the creation of a stress situation at all, one good example is having to make a decision with important consequences. In other cases, the stress factor is just the opposite: the lack of available information.

The biggest issue with the theory of information fatigue is that it presents special cases as universal ones. There are a number of special job titles where special deformations resulting from the encounter of the human psyche and information processes should be examined: stock brokers, computer operators (Bodrov, 2000), air traffic controllers, and lawyers, along with politicians who suffer because of the moral compromises they made. Moreover, attention deficit had had a clinical classification long before Lewis's conceptual innovation (Attention Deficit Disorder, ADD), with well-known symptoms: forgetfulness, losing things, lack of concentration, making small mistakes, hyperactivity, etc) – however, this does not result from a special information environment, but partially from medical-genetic, and partially, from socio-cultural causes.

EVALUATION AND RECOMMENDATION: As the approach that gives the expression its meaning is very problematic, we hope it will disappear as soon as possible.

References:

- Abaitua, J.: Information Fatigue Syndrome
<http://paginaspersonales.deusto.es/abaitua/konzeptu/fatiga.htm> [2010.06.22.]
- Dying for Information? (Brief summary)
<http://old.cni.org/regconfs/1997/ukoln-content/repor~13.html> [2015-03-21]
- Bodrov, V. A. (2000): Study of the information stress problem in operators. *Human Physiology* 26(5), 605–611.

Information feudalism

~ an unjust and inefficient social system in which the right to information access, promotion, or use depends on money, ancestry, and/or power.

Expressions used with the same, or very similar, meaning: information monopoly

Antonym(s): open access, open data, free information

Expressions from related concepts: the patent system, intellectual property

Which category? An uniquely created word that did not manage to become a technical term.

The phrase in the language system is unknown, the only reference is the book with the phrase in its title.

Peter Drahos, Australian researcher of the patent system and intellectual property rights in global and native people's contexts, in a 1995 article, foresaw a depressing picture of the future of a society in which, by 2015, information becomes a tool of power, and where its fate – who can access it, who can use it – is decided by a handful of people. He named this system information feudalism.

Information feudalism is an economically inefficient, ownership-based society that does not consider innovation and knowledge transfer from the viewpoint of public interest. It allows the cultural heritage that is the shared treasure of humanity to concentrate in the hands of the few, based on ancestry or wealth. Much like historical feudalism, this system also empowers a small range of privileged people (citizens or corporations), as opposed to associations or organisations that come together for shared goals.

According to Drahos, the most unacceptable about this is that the operation of information feudalism thus imagined is contrary to the basic idea of information society, intellectual freedom, free access to information, and information equality.

Seven years later, along with a co-author, he named his information utopia “Information feudalism” and published it, arguing that reality had become closer to his vision. Their goal was to draw attention to processes that had started and that lead to the conclusion that, unless change happens soon, information feudalism may indeed become a definitive system, that may only be stopped if we joined forces. Thus the main task of nation states is to ensure information freedom with legal means, as soon as possible.

Interestingly, in the 20 years that passed since the publication of the first article, changes have happened that appear to reinforce Drahos's information feu-

dalism idea (scientific publications cannot escape subscription-based publisher domains, the bastions of intellectual property rights are still holding strong).

Yet, in parallel, numerous emancipatory channels have opened up, giving information access a new magnitude. Reality became more complex and controversial; it cannot be described by a smartly invented phrase.

EVALUATION AND RECOMMENDATION: Drahos himself intended the expression as a 'suggestive metaphor', and did not want people to think about the mediaeval age. Feudalism, however, permits no other interpretation, therefore this was not a great choice. Moreover, the explanatory value of the expression is decreasing, it will soon be mentioned only in historical overviews.

References:

Drahos, P. (1995): Information feudalism in the Information Society. *The Information Society* 11: 209–222.

Drahos, P. – Braithwaite, J. (2002): *Information feudalism*. Earthscan, London.

Information filtering

~ an interposed activity that results in only valuable, interesting, useful, or pre-ordered information getting to users.

Expressions used with the same, or very similar, meaning: content filtering, Web filtering, data scrubbing

Antonym(s): infodump

Expressions from related concepts: information processing, information operation, decision-making support

Which category? A technical term imported from library and general information science into the vocabulary of experts on network systems.

The phrase in the language system is only present in a narrow professional community as a strong term. It is also often used in everyday situations in the sense of 'selecting' information.

Information filtering systems had already been popular in early network communities in the early 80s (Denning, 1982), but they only got a central role (and a place in every IT dictionary) when Internet use became a mass phenomenon.

The basic mission of information filtering is to make access to data that would otherwise be lost in the bloated information sets easier for users. As every user has their unique interest, information filtering systems adapt to needs based on user feedback and work in a personalised way (often as systems of suggestions). They typically focus on the long term information needs of users in analysing the dynamically shifting information flow.

Information filtering systems are made up of two units: the filtering agent and the user profile. The filtering agent works as an interface that connects the user to the documenting system. It filters irrelevant content from the incoming data set, and only transmits valuable documents to the user.

In time, the filtering systems gets more efficient as it learns the user's needs more accurately. The user profile contains the owner's interests, needs, goals, and behaviour, and sends constant feedback to the system. The quality of the user profile has a great role in creating a filtering mechanism that is as efficient as possible, as the system processes incoming information based on the settings received from it.

User profiles can be divided into two categories: static and dynamic profiles.

The static profile is built based on data provided by the user (age, gender, occupation). The dynamic profile is built from the user's activity (geographical location, occupations, browsing habits).

There are two approaches to information filtering: content-based and collaborative filtering. Content-based filtering systems select search results based on connections between the data content and the user's needs. Collaborative filtering systems work by comparing preferences of users with similar interests. (Lists of collaborative information filtering systems generally start with Xerox's 1992 experimental mailing system, Tapestry.)

These days, collaborative filtering is employed by Amazon.com and e-Bay, where users receive new product recommendations based on their earlier purchases. There are also hybrid filtering systems that unify content-based and collaborative methods. For example, at Yahoo, documents are evaluated by people, and they enter the classified information into the database.

Information filtering systems may be used to select various types of information (articles, e-mails, music and movies, news, pictures). The simplest and most common filtering methods are grouping (news groups, mailing lists, forums).

EVALUATION AND RECOMMENDATION: The professional meaning that is strong and contains many important modalities and the everyday interpretation can co-exist peacefully, their parallel existences do not lead to a disturbance.

References:

- Belkin, N. J., – Croft, W. B.: Information filtering and information retrieval: Two sides of the same coin?
https://www.ischool.utexas.edu/~i385d/readings/Belkin_Information_92.pdf [2015-01-05]
 Denning (1982): Electronic Junk, Communications of the ACM 23 (3), 163–165.
 Rouse, M.: Content filtering (information filtering).
<http://searchsecurity.techtarget.com/definition/content-filtering> [2015-01-05]

Information float

~ the time an information package takes to get from sender to recipient. Float also means the state when information is on its way.

Expressions used with the same, or very similar, meaning: information delay

Antonym(s): immediacy, real-time data transmission

Expressions from related concepts: information transfer, information diffusion, information diffusion time

Which category? An expression imported from the dictionary of project management and logistics into information sciences, for professional use.

The phrase in the language system is used in a very homogeneous manner, various organisations use it in the same sense.

In a media environment it means the time that elapses between acquiring information and getting it on screen. For companies: the time that elapses between acquiring information and getting it to the employees. At a printing company: the time interval from handing in a publication to its shipping to the place decided by the client. In a laboratory: the time that elapses between the creation of test data and its medical evaluation (Friedman, 1994). In the military, the speed of transferring messages between different levels (down: giving and receiving orders, up: intelligence reports, reconnaissance data, position signals, etc.). In IT: the moment when information, as a signal, is travelling between two systems (or is temporarily not assigned to either).

In project management, the time requirement of transmission may be planned, and as such, it is considered reserve time that does not endanger the scheduling of the relevant processes.

In the engineering sense, every lead time is a delay, as the moment of arrival does not immediately follow the moment of departure. Practically, only float times that arrive later than necessary or than planned are considered delays. Float often is merely the result of a learned practice or habit, therefore one catchword that often drives organisation screening is: Reduce the information float!

The science history of information transfer is also the history of decreasing float time. When President Lincoln was shot, Americans learned about it quickly, as the news were telegraphed all over the country – but in Britain, they only learned about it after five days, as there was no telegraph connection across the ocean yet. Nowadays, a radical decrease of float is not only important in the news market, but also in the market of financial transactions: even tenths of seconds may be very important there.

EVALUATION AND RECOMMENDATION: The concept is usually paraphrased, its professional use is rare.

References:

Friedman B. A. (1994): The laboratory information float, time-based competition, and point-of-care testing. *Clinical Laboratory Management Review* 8 (5), 509–13.

Information flow

~ a part of the information life cycle that may be sensed by the outside world, when it is constantly on the way in the transmission process.

Expressions used with the same, or very similar, meaning: information transfer, information diffusion

Antonym(s): information black hole

Expressions from related concepts: information lead time, information communities, information needs

Which category? The phrase was, for a long time, used in its everyday sense in scientific discourses, and its introduction as a term was not successful in information science, still, it is used in a number of fields.

The phrase in the language system is very well diffused and popular, its professional and everyday uses overlap completely.

It seems impossible to tell when the expression ‘information flow’ was first used; the Oxford English Dictionary claims the first occurrence was in 1942. The information science of the Fifties only used it, but did not reflect on it.

Everett M. Rogers used it as a scientific term, attempting to follow and model the diffusion of information (Rogers, 1962), recognising that, in the end, information content is only an information set. Rogers was interested in the personal relationship space of transfer, but in the end, he felt ‘flow’ was insufficient, and used ‘diffusion’ in its place. He meant the extra content that includes not only movement, that is the natural state of information, and includes its multiplication in its movement.

Exchanging statements between two or more people, inside or outside an organisation, may all be described as information flow. Between ancient and contemporary states, or even in the Hungarian system of outposts, in the wars against the Turks. Behind every use is the recognition that the path of information flow, with its relationships, draws the network that has members that, as they affect each other, may be considered members of a larger system (Dretske, 1981, Pérez-Montoro, 2007). When we talk about the barriers of information flow, we are actually interested in what can the information reproduction of this larger system more difficult.

When it is important (especially inside large organisations and information systems), information flow is also modelled, typically on an information flow diagram (IFD). This makes optimising information flow and increasing its safety easier.

Molecular biology uses the expression frequently as a technical term, discussing the dedicated directions of information flow between DNA, RNA, and proteins.

Financial researchers have also discovered that along with money flow and financial instrument flow, information also flows.

EVALUATION AND RECOMMENDATION: It is a mature, well used expression, that gains its strength from the plastic, easy-to-comprehend image association of flowing water, or the flow of blood. For this reason, the metaphor may occasionally go further, for example in complex, multi-level systems, such as early warning systems. Here, information first flows upstream, until we get from noticing danger to the moment of decision-making and the choice of action, then it goes downstream, until the emergency signal arrives to those in danger through a number of channels (Lendholt and Hammitzsch, 2011). Anatomically, it is very similar to the brain regulating information flow in visual recognition (Van Essen, 2005).

Flow and diffusion are occasionally synonyms, but we should consider the difference between the two, and occasionally emphasize it.

References:

- Rogers, E. M. (1962): *Diffusion of innovations*. New York, Free Press of Glencoe.
- Pérez-Montoro, M. (2007): *The Phenomenon of Information. A Conceptual Approach to Information Flow*. Medford, NJ. The Scarecrow Press, Inc.
- Dretske, F. (1981): *Knowledge and the Flow of Information*. Oxford, Basil Blackwell.
- Lendholt, M. – Hammitzsch, M. (2011): *Generic information logistics for early warning systems*. Proceedings of the 8th International ISCRAM Conference – Lisbon, Portugal, Május.
https://www.researchgate.net/figure/228401423_fig1_Figure-1-Upstream-and-downstream-event-and-information-flow-in-early-warning-systems
- Van Essen, D. C. (2005): *Corticocortical and thalamocortical information flow in the primate visual system*. *Progress in Brain Research* 149, 173–185.
http://brainmap.wustl.edu/resources/VE_PBR05.pdf

Information fog

~ the sensory, comprehensive, and orientation uncertainty caused by the contourless, impenetrable mass of information.

Expressions used with the same, or very similar, meaning: information jungle, information maze

Antonym(s): information resource

Expressions from related concepts: information pollution, information overload, information glut, information explosion

Which category? A stylistic, everyday expression.

The phrase in the language system has not diffused, its rivals are more popular.

Faced with a large volume of seemingly disorganised information, it is hard to decide where to start searching, which direction to take, which practices can be useful for avoiding information traps, and how we can cut corners to get to the desired data in the shortest way possible. Information fog behaves like the real one: it makes navigation all but impossible.

As the concept was not born as a technical term, and has many independent occurrences, it is hard to tell who and when first wrote it down in this sense. Certainly, after the detonation of the Internet, around the millennium, it became one of the often used expression, especially thanks to the (often re-issued) book of William B. Badke that attempts to aid navigation in the information fog using the weapon of humour.

The book is a basic guide, it primarily contains useful advice for amateur researchers and university students introducing the phases of the areas of research planning, source selection, and information seeking. He writes about how a topic can be narrowed down, how a clear draft can be made, where one should search in the wide scale of databases, including library catalogues and magazine repositories, and how metadata can be well used.

According to Badke, navigation in the information fog may be learned, only the proper preparedness and strategy are required.

EVALUATION AND RECOMMENDATION: By calling something foggy in the marvellous world of linguistic communication, we mean that it is uncertain, may be interpreted in multiple ways, blurred, unclear, and offers little help for the unambiguous identification of meanings that aim to serve as communal. However, information fog is not connected to this world of meaning, and as other expressions with stronger image content better express the feeling of being lost or the

difficulty of navigation, we expect the expression that is not too popular to start with to fade from use.

References:

Badke, W. B. (2000): Research Strategies: Finding Your Way Through the Information Fog. iUniverse-Indigo

Information footprint

~ an index used to measure the development of an information society: the unique combination of results in certain statistical data fields for the given area (country, region).

Expressions used with the same, or very similar, meaning: information development measurement

Expressions from related concepts: readiness measurement

Which category? A social science term for a well-defined, complex indicator.

The phrase in the language system is present, but only in scientific communities of development measurement experts. Outside this, uncertainties of meaning and interpretation occur.

Ecological footprint became a popular term in the early 90s. It answered how the resource use of countries, company types, or even private citizens may have a part in unbalancing of the ecological balance.

Information society measurement, that got its start around the same time, could be influenced by the very popular 'footstep' part, as the model that uncovered the organisational proportions of the most important indexes of development (the well diffuseness and quality of information infrastructure, education, the ratio of content consumption, the quality of experience and abilities) was named the 'information footprint'. Percentages describe how far a country got. Where is it doing well, where is it lagging behind, and what individual characteristics does the structure of the various indexes demonstrate.

Hungarian researchers started to use it for smaller units, regions, creating the methodology of measuring the regional information footprint, primarily looking to answer how regional inequalities may be better mapped. Unfortunately, this clear and narrow meaning is loosened by the fact that information footprint is occasionally used instead of the very well diffused 'digital footprint' that reflects the data mass resulting from the on-line activity of the various users. Although the context clarifies it, so it does not disturb interpretation and understanding, on the long run, the meaning should be cleared up.

Interestingly, much like 'information board', information footprint also has another use, very different from the above one: it is one of the names given to foot-shaped stickers that demonstrate the correct path.

EVALUATION AND RECOMMENDATION: Other than the (improving, differentiating) professional use, alternative uses and interpretations cause some uncertainty. Other than mentioning this, we have no reason for a firmer intervention.

Information foraging

~ more and more, not only information experts, but the average users of our age are considered information consumers whose basic behaviour includes constantly searching for information in their environments – similarly to the way animals' everyday lives are defined by the drive of foraging.

Expressions used with the same, or very similar, meaning: information hunger, information search, information hunt

Expressions from related concepts: information addiction, information environment, information metabolism, information behaviour

Which category? An information science conceptual experiment to describe one of the basic forms of information behaviour.

The phrase in the language system did not diffuse outside the narrow professional community despite its ingenious nature.

In the literature of anthropology, foraging had originally been the last part of the fishing-hunting-gathering triad, later, it became an umbrella term for all three natural modes of gathering food. (This was made easier by the fact that the same word became widely used to describe animals' search for food.)

Exploration of the strategic elements of foraging started in the 70s, when the conceptual weaponry of cost-benefit analysis was first used for a behaviour that had been considered well known. For example, a lion could benefit enormously from capturing a grown bison, but it would cost too much energy. Choosing one or two young bison is a better strategy, even though the benefit is smaller, the energy to invest is also considerably less. Similarly, routine changes that explain why and how animals move on to new hunting grounds once they have exploited the goods of their previous areas become comprehensible.

And as these mechanisms seem to work the same way in the human brain and as cultural code, in early communities, as well, the techniques of information searching and collecting could be approached through the analogies of foraging.

As Pirolli and Card first described in the mid-90s, information-seeking people follow the same strategies as animals. The benefit is the necessary information, and the cost is the time of the search. As soon as cost supersedes the remaining benefit, they immediately go on to a new Website or database. However, it is not laziness, as some assume, behind the 'maximal benefit – minimal effort' logic, but the more important and better recognised value of the user lifetime.

The analogies of food and information hunting are very fertile. The source of food is the place where we may find the desired information. The informa-

tion trace or information trail is found at the same time and space as the desired target, and information hunters are instinctually led in the right direction by the information scent. The cost-benefit analysis and the subsequent decision is often not even conscious.

As users must utilise creative solutions as well as the easily learned base strategies depending on the time spent searching, the time needed for information foraging is often shortened, the results measured in the increased power of learning and navigation.

EVALUATION AND RECOMMENDATION: A technical term built on a fertile and exciting analogy was born, that fits the conceptual network of the feeding/metabolism field. Still, we doubt whether it can be freed from the scientific discourse. Will it be transferred into the vocabularies of those who try to understand their own everyday information behaviour? Will the expression add enough value to the description, so that it remains poorer without?

References:

- Pirolli, P. – Card, S. (1995): Information Foraging in Information Access Environments. Association for Computing Machinery. May 1.
- Trepess, D.: Information Foraging Theory.
https://www.interaction-design.org/encyclopedia/information_foraging_theory.html [2015-01-16]
- Withrow, J. (2002): Do your links stink? American Society for Information Science Bulletin. June 1.
- Word Spy. The Word Lover's Guide to New Words
<http://wordspy.com/index.php?word=information-foraging> [2015-01-16]

Information fragmentation

~ reaching necessary information harder because they are scattered in various places.

Expressions used with the same, or very similar, meaning: information noise

Antonym(s): information integration, access on a unified interface

Expressions from related concepts: disorganisation, information environment, information ecosystem

Which category? It has entered the professional-public vocabulary of digital culture experts, but it did not start on the path of becoming a technical term.

The phrase in the language system is rare, few use it on account of its ponderous nature.

Ideally, we are capable of using our personal data or the information sets we consider important at the right time, place, and situation, in the way that seems the most obvious to us. However, this rarely happens in reality. The information we possess is generally scattered physically: at our workplace, our home (and even there: on the smartphone, the computer, in notebooks, books, and other places). Moreover, if we consider the problem in greater detail, we notice that even on a data carrier (computer, book, phone), what we need is found in various paths. The time spent constantly searching, or going to known places of storage is the price of information fragmentation that we pay (Jones, 2004). And as the Latin ‘fragmentum’ is no stranger in Neo-Latin languages, we often speak of the end result of the process, the state as ‘fragmented’, and the process, as the fragmentation of information.

Information fragmentation keeps growing with the increase of the number of specialised end devices and practical applications. The necessary data is found in the most diverse sources: e-mails, folders with complex hierarchies, USB keys, hard disks, or even the ‘cloud’ itself. The problem is also made more complex as harmonising and synchronising the various devices and programs is complex or hard to do.

Personal Information Management (PIM) experts work on solving the problems. Their solutions are generally programmes and applications that organise and index (label) information and tasks, and using them, these are found easier. We may consider them modern calendars and bookmarks that do not only bring times and places, but any kind of information close to us.

Nowadays, many such programs exist, but because of the complexity of base situations that increase information fragmentation, these can only alleviate problems and simplify issues.

EVALUATION AND RECOMMENDATION: Our base devices that serve information storage and management are in a constant integrational movement, but in parallel, they respecialise time and again for a function. Therefore the base situation that causes information fragmentation does not change. If paths will not get considerably longer, in time and the number of operations, the significance of the problem will not increase enough for information experts to study it in more depth. Therefore we believe the expression to stagnate.

References:

- Jones, W. et al. (2008): The Personal Project Planner: Planning to Organize Personal Information. Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, CHI, New York, 681–684.
- Ahuja, A. (2013): Contextinator: Recreating the context lost amid information fragmentation on the web, Faculty of the Virginia Polytechnic Institute and State University, Blackburg. <http://ankitahuja.com/thesis.pdf> [2015-08-14]

Freedom of Information, FOI

~ the comprehensive name of legal institutions that attempt to give the freedom of opinion, the freedom of the press, and 'informed participation' by citizens a chance to get involved in social issues in the current situation, and therefore make state administration information public.

Expressions used with the same, or very similar, meaning: publicity of information of public interest

Antonym(s): hiding information, encryption, limiting access

Expressions from related concepts: information games, information power

Which category? An information policy and information rights-related legal term with a solidified meaning.

The phrase in the language system is naturalised, its everyday meaning is identical to the professional-scientific one.

Although a number of thinkers have recognised it and wrote about it in a modern way, the principle and concept of freedom of thought and opinion was only born as a political call to arms in modernity, as that builds upon a new relationship between power and citizen, in the fight for the right to freedom; a short while later, freedom of the press also appeared. Their common multiple is the expectation that making individual pieces of information that citizens consider important to represent and share communal and their entering the stream of information should not be hindered by any coercing force (law, law enforcement organisation).

The other side of the formula, the opportunity of learning about the data and information fortunes amassed on various points of the political institutional system also appeared in the same era, the time of the founding fathers of American democracy, as the ideal of the informed citizenry that participates in common causes (Brown, 1997). Thus, after a while, the two principles entered constitutions hand by hand: everyone has the right to the freedom of opinion and to learn about and promote public data. (Along with these, the principle and practice of information privacy, i.e. that citizens may decide the fate of their personal data amassed in various social subsystems (in the worlds of politics and business) would be only became generalised in the end of the 20th century.) The right to freedom of expression was expanded with the right of participation of decisions, primarily in environment-related cases (see the Aarhus Convention).

The realisation of freedom of information became institutionalised by it becoming a right that is regulated in basic laws. The relevant high-level laws (Freedom of Information Acts) regulate not only the ways in which citizens may realise

their rights, but also the types of information and the reasons regarding which the state may be freed from the duty of data provision. Handling exceptions and the interpretation of public interest allows the state to make the limits narrower than the spirit and the word of laws and citizens' legal awareness and sensitivity would expect – in this case, the judicial system may serve as the correction mechanism. There generally is an independent organisation that ensures that the law is kept and information freedom is realised in Hungary, the Nemzeti Adatvédelmi és Információszabadság Hatóság, the British Information Commissioner, the German Bundesbeauftragte für den Datenschutz und die Informationsfreiheit, and the French Commission d'accès aux documents administratifs (CADA). The role of non-governmental organisations is also important as they may inspire citizens and public sector workers to realise the legal provisions and the spirit of the law by providing legal aid, awareness-raising actions, and campaigns.

EVALUATION AND RECOMMENDATION: The meaning carried by the concept makes navigation of an area very important in everyday life easier, therefore teaching it is justified, even in the framework of the school system.

References:

Brown, R. D. (1997): *The Strength of a People: The Idea of an Informed Citizenry in America 1650-1870*. The University of North Carolina Press

Information fusion

~ the transformation of pieces of information born from various sources, at various times, into efficient representations that aid human or machine decision-making with automatic or semi-automatic solutions.

Expressions used with the same, or very similar, meaning: information integration, data deduplication, reference integrity, sensor fusion

Antonym(s): information loss

Expressions from related concepts: information gain, information surplus, information channel, information actions

Which category? A data science-IT term that replaced an earlier expression because of the necessary need for additional meaning.

The phrase in the language system is popular in the relevant professional sub-cultures, but it is spreading in virtually all communities.

We provided the definition based on a Swedish source (Information Fusion Research Program, University of Skövde) that undertook defining the intersection of all definitions used since the late 80s. This also meant actualisation based on the technological changes that happened in the meanwhile, the ever-stronger scientific reflection, and the increase in the number of fields of application (Boström, 2007).

Its predecessor, the long-used information integration form was primarily sensitive for heterogeneously formed information from heterogeneous forms (its answer to these was data consolidation), and it mainly used organisational operations on unstructured data in order to attain raw materials for later data mining. The introduction of the concept of information fusion was requested by practising and theoretical experts who believed that the process of value addition cannot stop at this point, and the point is the creation of new information sets, that are made meaningful not only by their mere existence, but the ability to decrease uncertainty. (Naturally, the emerging importance of next-generation sensors and the ‘internet of things’ in the data stream also had a part of the role in the conceptional innovation pressure.)

The maturity of the scientific discourse around the concept expressing the necessary extra meaning is demonstrated by the fact that there are two international periodicals that specialise in the area (Elsevier’s Information Fusion – An International Journal on Multi-Sensor, Multi-Source Information Fusion, founded in 2000, and since 2006, the Journal of Advances in Information Fusion). This latter one belongs to the International Society of Information Fusion (ISIF) which organises its 19th International Conference on Information Fusion in 2016.

EVALUATION AND RECOMMENDATION: In other languages, various versions of ‘fusion’ are used instead of longer and less natural forms. Its primary area of use is nuclear physics and nuclear energy, as well as the world of corporate fusions. The strong feeling of the word conjures the idea of the creation of a new quality in both cases (fusion reactor, company fusion), therefore in the case of information fusion, it may also be considered a good choice. Its verbal use (to fuse) occasionally feels strange, and should be avoided in our case.

References:

Boström, H. et al. (2007): On the Definition of Information Fusion as a Field of Research.
<http://his.diva-portal.org/smash/get/diva2:2391/FULLTEXT01.pdf> [2016-01-22]

G

Information gain

1. ~ in the mathematical theory of information, an amount attained by analysing the changes of probability distributions, the number that describes the occurrence of individual signals.

Expressions used with the same, or very similar, meaning: Kullback-Leibler divergence

Antonym(s): information waste

Expressions from related concepts: decrease of entropy

Which category? A technical term in multiple sciences and their relative areas of use.

The phrase in the language system is used strictly in the professional elites of the above communities.

2. ~ the growth of the information assets we possess due to a professional operation.

Expressions used with the same, or very similar, meaning: information surplus

Antonym(s): information waste

Expressions from related concepts: information gathering

Which category? It is used in an everyday sense, but in a scientific environment.

The phrase in the language system exists with occasional use, it has not started on the path of developing into a tighter technical term.

1. The classification algorithms of artificial intelligence research that works on creating decision-making trees have been measuring the difference between information requirements before and after certain types of tests, in order to choose the attribute that allows for the greatest information gain. The conceptual apparatus was imported from information and coding theory by both them and data miners, who also like to use information gain.

Mathematically it is used as the synonym of a two-variable function, the Kullback-Leibler divergence, which may be demonstrated with the following example.

Let's suppose that a news source publishes news constantly in a digital environment, that, in their physical version, mean series of signals. In these signal series, the various signals follow and repeat after each other according to a pre-defined distribution. Knowing this, we may become capable of compressing signals, however, lacking this, we can only declare an estimated distribution. Kullback-Leibler calculates how many more bits are needed for the coding of a series of signals (e.g. a piece of news) compared to the original, optimal version from the difference between the original, optimal version which we can only create if – as mentioned before – we are perfectly aware of information distribution and estimated distribution of signals.

Information gain may also be used in applied ways based on the Kullback-Leibler divergence, for example, to calculate the mutual edification of two (business, political, etc.) parties. The received value may, based on the complexity of the situation, close to optimal (if it is simple), and far from it (if it is complex).

2. Information gain is often used in its everyday sense, not as a technical term, but in a technical context, in various fields. For example, in meteorology, in the analysis of the information content of predictions, results are considered information gain. For NGOs conditioned for continuous informing, the Internet is an ideal interface as it integrates numerous information channels, the proper use of which can be used to reach a large information gain (Leggewie, 1997). In adult education, the (often surprising) information gain may be expected from a pedagogical programme built on questions asked in the appropriate form and rhythm regarding goals, motives, future states, and connections. But even astrophysicists use it in their explanations in the 'surplus' sense. Although in the moment of collapse (evaporation) of a black hole, some of the remaining pieces of the singularity can escape, yet this tiny information gain does not balance out the loss, yet it's good to know about this.

EVALUATION AND RECOMMENDATION: The two different meanings reflect the differences stemming from the mathematical-statistical, quantitative and the everyday, qualitative approaches to information. From the increasing mathematical-IT use, it is expected that in time, more and more subtypes will emerge (as it has already happened by creating the concept of relative information gain). And if information gain disappeared from the world of occasional use, we would be no poorer: content and meaning to be displayed would stay expressible with other linguistic tools, as well.

References:

- Michell, T. M. (1997): Machine Learning McGraw-Hill Science, 55–65.
Leggewie, C. (1997): Netizens oder: Der gut informierte Bürger heute. Transit 13, 3–25.

Information games

~ starting positions of informedness that define the possible decisions and steps of competing and cooperating actors.

Expressions used with the same, or very similar, meaning: games

Expressions from related concepts: information behaviour, information power, information asymmetries

Which category? A slightly tautological term of multi-disciplinary game theory. The phrase in the language system quits the confines of the narrow and formalised original interpretation time and again, and is also used in a more general sense.

Mathematics-based game theory, that got its start before World War II, then developed quickly, primarily developed its conceptual and mathematical apparatus for the modelling of the actors of the world politics-diplomacy scene. It primarily sought to answer what may be considered effective behaviour when the decisions of those involved mutually affect each other in various (two or more person, co-operative or competitive) situations.

The information viewpoint is sensitive to preliminary information that regulates decision-making. The game is based on perfect information, if every participant possesses every relevant data, from rules to knowledge of earlier events. It is imperfect, if many circumstances are known (who the other is, what are their possible strategies/steps, preferences, and benefits), but the actions the other player will take are not known. And it is incomplete when how many partial pieces of information are known of the above ones and how many are not known is random.

We must add that the use of the concept is inaccurate. The nature of every game is information, as they are based on decisions and actions taken after evaluating information from the space of problems. That's why it is called game theory, and not information game theory. Information games are not a class of games, as suggested by the name: every game is based on information, the separate name refers to a characteristic of the participants of the game, i.e. their starting information state.

Methods are developed continuously, Hungarian-born János Harsányi (1920–2000) won the Nobel prize for his research of non-complete information games in 1994.

In the meanwhile, the concept that is usable in strongly formalised circumstances became usable in a wider and wider range. Any information-transmitted relationship of anyone may be analysed and described as games: everyday communication situations, conflict types, the strange pas de deux of citizen and power around information rights, the types of mutual knowledge (Hamp, 2006), if neces-

sary, going back to their historical equivalents (all the way to animals that visually trick the enemy by making themselves seem bigger).

EVALUATION AND RECOMMENDATION: Although the expression ‘information games’ is not accurate, its use already grew roots in game theory. As its mathematical armoury is not well known at all, the change in meaning towards the everyday sense causes no issues in the use of the concept.

References:

- Rasmusen, E. (2006): *Games and Information: An Introduction to Game Theory*. Eric Wiley-Blackwell.
- Neumann, J. – Morgenstern, O. (1944): *The Theory of Games and Economic Behavior*. Princeton University Press.

Information garbage

1. ~ attention must be paid, and processes must be regulated considering not only the recycling of the physical materials in discarded IT devices, but also the destruction of sensitive data stored on them.

Expressions used with the same, or very similar, meaning: waste data

Antonym(s): valuable information

Expressions that belong to the wider family of concepts: information awareness

Which category? An everyday, practical expression that names a special class of electronic waste generally talked about because of the precious metal content that may be extracted from it.

The phrase in the language system did not manage to solidify, but in its (rare) uses, the context can always make its meaning clear.

2. ~ the part of the output of institutions specialised in information production that makes finding and processing functionally important information harder because of its mass and quantity.

Expressions used with the same, or very similar, meaning: information noise

Antonym(s): valuable information

Expressions from related concepts: information anxiety, information overload

Which category? A term that occurs in a professional-personal use, that occurs with a terminological pretence in contemporary communication and media theory texts.

The phrase in the language system represents the drive to present reservations regarding the value of the given information sets as an objective judgement.

3. ~ any content that is judged to be of a lower quality, harmful, or dangerous.

Expressions used with the same, or very similar, meaning: information poisoning, information pollution

Antonym(s): valuable information

Expressions from related concepts: misinformation

Which category? An everyday term that almost carries the effect of an interjection.

The phrase in the language system reflects the moral panic raised by the spreading of and easy access to content considered objectionable.

1. Telecommunication devices that are retired from use cause not only problems of safekeeping and storage, but a severe environmental stress as well, as they must be treated and recycled as hazardous waste. It became a challenge especially for data sensitive megacorporations that in a technological change, it is not enough to provide for the fate of the devices, but the information sets stored on them must also be destroyed in order to avoid them getting into the hands of unauthorised people (for which there already were numerous examples). Accordingly, an entire set of the appropriate methods, regulations, and documentation duties has developed in recent years. However, we find nothing similar for the data carrying electronic waste of private persons – here, everyone must decide how conscious they want to be with the protection of their data for themselves.

2. Great information production and storage institutions (archives, libraries, news agencies) accumulate and keep information in an unavoidably wider range than it would be necessary for later use. This has multiple primary reasons: in the moment of the birth of information, it cannot be known what will later become important, valuable, and usable and why, and sets are, by their nature, created in ‘packs’, and even their obsolescence can be a ‘built-in programme’ (this is well reflected by library cullings). For example, most resources published by bureaucracy is information garbage for historians. Others consider garbage to be pieces of information (otherwise important and accurate) that are self-serving, quiz-like, that should not be amassed in heads but in handbooks; others, unnecessary and redundant train station passenger information.

3. A recent political-strategic document (Talyigás, 2000) demonstrated a very different interpretation of information garbage: “The formation of information ‘garbage’ is a problem by itself, and this is only compounded by information published on-line generally without control and legal regulations. Websites that focus on lowly instincts and emotions or that exploit them are spreading, that, working as spiritual drugs, take interested people away from true information values.”

This discourse calls worthless, harmful, meaningless content ‘information garbage’, coming from origin points that are moral, ideological, quality, or represent moral panic. In this vocabulary, almost anything can be considered garbage, from soap operas that are considered to “make viewers stupider” to obscene lyrics to ideas the author dislikes.

EVALUATION AND RECOMMENDATION: The fact that the expression did not become clearer even in English-speaking countries and that information is used with numerous suffixes (garbage, trash, mess, rubbish) reflects the changing, in-

consequent, and spontaneous word choice, in which garbage and mess behave as synonyms, but are used to express very different things. Therefore clarification is expected to clarify, with the distancing of meanings 2 and 3. The ‘information garbage’ formula will be used more and more often to describe content that is considered worthless from a quality/moral view, and ‘information mess’ can describe information sets that are “functionally useless”. Therefore, logically, another name should be found for meaning 1.

References:

Talyigás J. (ed.) (2000): Tezisek az információs társadalomról, Miniszterelnöki Hivatal.

Information gas station

~ the unique invented name of the Helsinki City Library virtual reference service. Its mobile version is the information barrel.

Expressions used with the same, or very similar, meaning: information station, information kiosk

Expressions from related concepts: information public good, information infrastructure, information utility

Which category? An individually created word, part of a family of objects.

The phrase in the language system refers to a specific institution, it has no alternative uses. Just like fuel from the gas station is necessary for our vehicles, citizens require constant information support, but the same task is fulfilled here by the library. The Information Gas Station (iGS) service set up in 2001 by the Finnish capital was based on the same analogy when they installed smart, new devices that were somewhat reminiscent of refuelling machines. Recognising that people do not only have differing needs for information and usable tools, but different levels of knowledge that allow them to find what they need, as well, these personalised “corners” allowed users to receive direct assistance from a librarian in their search for answers for professional questions. More specifically, by walking every step of the search process together, as partners. Later becoming a network, iGS made questions and answers available and freely browsable on its website.

The programme had originally been planned for two years, but it became so popular that it is still available today. It outgrew the walls of the library in the second year of the programme. Information barrels, computer stations with Internet access in red plastic frames showed up in plazas and at various events. These are accessible to everyone, much like self-service information gas stations; questions may be asked, and expert librarians are available to help. A radio studio also entered the programme, selected questions are answered here weekly.

EVALUATION AND RECOMMENDATION: This idea to popularise library services had received an ingenious and authentic name, but with the disappearance of the stations themselves, it will likely fade from the language, and will only be meaningful for people who have used or seen these information gas stations.

References:

Homepage of iGS: <http://www.kysy.fi/> [2015-03-26]

Homepage of Docstoc, with a slideshow about the iGS:

<http://www.docstoc.com/docs/99700956/iGSinformation-Gas-Station-as-Virtual-Reference-Service> [2015-03-26]

Information generation

~ the global community of young digital citizens, always connected to the available knowledge of the world, living an on-line life; thinking about their capabilities and problem-solving prowess is only limited by our imagination.

Expressions used with the same, or very similar, meaning: digital natives, Y-generation

Expressions from related concepts: information literacy, information culture, information civilization

Which category? There is a long history of giving each generation its unique name, and successful conceptual innovation spreads fast. There is a number of accepted formulae that refer to the digital generation, using information generation in addition to/instead of these seems superfluous.

The phrase in the language system has not diffused at all, its use is occasional.

The slightly poetic definition above also has a manifesto-like alternative: “We are now a community of digital citizens, with the world’s knowledge at our fingertips. Unrivalled engagement has made us all contributors to a vast information ecosystem. Businesses must evolve quickly, or face being left behind.”

One blemish here is that the source of both quotes is an American data and cloud specialist company, EMC, that financed a research programme of a leading futurology research institute regarding correspondences between the information characteristics required by business and the knowledge and skills of generations growing up in information culture.

In their hands, the ‘information generation’ is but a marketing term that reflects the laws of attention economy. Appropriation of a discourse is a powerful competence-communication tool for receiving future assignments, and a step forward in talent hunts, that can be used to tempt the best of the new generation of information management culture (Burke, 2016).

All they do to the term is put it next to the well-known predecessors: generation ‘X, Y, Z’, digital natives, millennials. There is no added value through any extra meaning, therefore it is a needless addition to the range of concepts, as there already are well diffused, well-used versions for what they want to express.

This was not always so. David Hand’s monograph from ten years ago, that even made “Information Generation” its title (Hand, 2006) found the use of the concept necessary in a civilisation theory framework. His starting point was that although the development of civilisation and the technology and culture of data management always walked hand in hand, our current society is characterised by

an extreme dependence on the rich data environment, therefore the key of survival is humanity's adaptation to this. He calls this the information generation, and in this role, this can be considered a powerful additional concept to information-centric world-view.

EVALUATION AND RECOMMENDATION: The discourse where use of the term is meaningful does not seem to continue for now, and those who use it with a large visibility do so as an unnecessary alternative of well diffused, proven terms.

References:

- EMC Information Generation: <http://www.emc.com/information-generation/about.htm> [2016-04-14]
- The Information Generation is Transforming The Future, Today Outlook (Research Report, Institute for the Future, 2015)
http://www.emc.com/information-generation/resources/IFTF_Outlook_Report.pdf [2016-04-14]
- Hand, D. J. (2006): Information Generation: How Data Rule Our World. Oneworld Publications.
- Burke, S. (2016): The Information Generation: How Millenials Will Drive Big Data Adoption. Askuity, May 10.
<http://www.askuity.com/information-generation-millennials/>

Information geography

~ the depiction of the real and virtual spatial relationships of information objects and flows.

Expressions used with the same, or very similar, meaning: information mapping, concept mapping, Internet geography, cybergeography

Expressions from related concepts: information visualisation, information architecture, information design, infographics

Which category? A convenient phrase, but not a technical term, regardless the disciplinary weight of the 'geography' ingredient. In reality, it has no scientific content, no construction, it is a solely visual genre.

The phrase in the language system may grow more embedded if more and more types of deeper and dimension-building reflective practices are constructed behind the visualisation activities.

World maps that depict Internet use and traffic data are found in multiple newspapers and professional publications. Beautiful pictures that depict undersea cables or transcontinental telephone lines are retroactively made. They visualise the areas of the Earth about which news are born in real-time, and these are comparable with the density of their communication. The geography of information economy represents the output data of the various information industries or the ownership relationship networks of the actors of information economy.

In these cases, geographic localisation always refers to a real spatial relationship.

However, modern visualisation techniques are capable of expressing logical spatial relationships: distances, occasionally even on three-dimensional concept maps represent semantic relationships, and not physical ones. The structured presentation of the key concepts and sub-fields of a field of knowledge may also happen with geographic analogies (although e.g. a tree structure is much more common).

EVALUATION AND RECOMMENDATION: So many things can be presented attractively on a map-based infographic: it is natural that the (typically quantitative) world of information also moves to these. We can see it as a real scientific field, a fresh area of research when the combination of information variables and geographic visualisation will have a heuristic value: when it will not only illustrate and connect attractively, but become a source of new knowledge, new information, new realisations.

References:

Information Geographies – Thematic research page, Oxford Internet Institute
<http://geography.oi.ox.ac.uk/?page=home> [2016-03-26]

Information geometry

~ the field of mathematics that uses the methods of differential geometry for probability analysis. In other words: statistics + differential geometry = information geometry.

Expressions from related concepts: information theory

Which category? A mathematical term.

The phrase in the language system is unknown to those who are not experts in the relevant field of mathematics.

In order to understand the definition, we must explain the mathematical terms it contains. Differential calculus is a method of mathematical analysis that analyses how various functions, may they be real or complex in value, change due to the effect of an independent variable. Probability theory serves to calculate the chance of the occurrence of recurring, random phenomena (mass phenomena). Information geometry is created by the contraction of these two mathematical methods.

Its present form is based on the research of Japanese mathematicians in the 1980s, the role of Sunicsi Amari and Hiroshi Nagaoka must be underlined. They are the most cited scientists of the area. Their book, translated into English, is the most definitive work in this relatively young field. Its first half provides a comprehensive explanation of the mathematical bases of information geometry, and the second presents its fields of application (statistics, information theory of linear systems, quantum mechanics, convex analysis, neural networks).

EVALUATION AND RECOMMENDATION: In the translation from English to other languages, it is best to reflect this with a noun phrase with pre-modifier as the grammatical logic of contraction implies that it reflects the geometry of information itself (yet this is not the case).

References:

Sunicsi, A. – Hiroshi Nagaoka (2000): Methods of information geometry, Translations of mathematical monographs. v. 191, American Mathematical Society

Information glut (information affluence)

~ information available at a huge rate. Its most common use carries a negative basic meaning: it is used to express the impossibility or near impossibility of navigating the ever-growing mass of disorganised, mis-catalogued information.

Expressions used with the same, or very similar, meaning: information abundance, information richness

Antonym(s): lack of information, information drought, information poverty

Expressions from related concepts: information production, information overload, information universe

Which category? An expression that, because of its uncertain interpretation, did not become a category level, but it is cheerfully used in social science literature.

The phrase in the language system first appeared as a synonymous term of a pre-existing one, obfuscating the original, value-neutral meaning.

The expression was first used by American writer David Shenk in his 1996 book “Data Smog”, a Bible of the information overload literature. His core idea is that it is impossible to draw consequences from, or find meaning in the data cloud that surrounds us without an appropriate structure or system.

Shenk’s undeservedly popular book, built on appalling fallacies has, unfortunately, put the concept of information glut into the discourse on information overload, practically as a synonym. All the publications written after Shenk’s work consider information glut one of the main sources of stress today. All this is supposed to be a result of humanity not having had enough time to get ready to handle so much information, and that individuals are unable to deal with an amount of information that is above their natural capacity. Rebecca Ganzel (1998) added the supposedly deterring, but completely unscientific and doubtful statement that a 17th century person would have needed a year to take in the amount of information that we encounter every single day.

As an opposite to this literature of panic, Alex Wright’s best-seller (2007) proved that information glut had shown up in multiple eras of human history, but it was handled as a challenge as opposed to a final danger. An organisational, professional, or technological solution that made it possible to manage the increased amount of information was found every time. Information glut, it appears, is a necessary prerequisite of learning about ourselves and the outside world – not by fighting insufficient information, but by handling tasks of processing and interpretation. Information glut is a neutral descriptive term: it does not automatically infer a positive (innovative) or negative (overload) context.

Regardless, more and more, 'glut' refers to the negative context, and 'affluence' (Samara, 1999), the positive one.

EVALUATION AND RECOMMENDATION: The extermination of Schenk's conceptual rampage and a return to the neutral interpretation of information glut would be a relief in information history and media sociology literature.

References:

- Shenk, D. (1996): *Data Smog: Surviving the Information Glut*. San Francisco, Harper Edge.
- Avery F. B. (1999): Taking charge of the information glut.
<https://darchive.mblwhoilibrary.org/bitstream/handle/1912/1882/proc98101.pdf?sequence=1>
[2015-10-01]
- Ganzel, R. (2007): Feeling Squeezed by technology? *Training* 4, 62–70.
- Wright, A. (2007): *Glut. Mastering Information Through the Ages*. Joseph Henry Press, Washington DC.
- Samara N. A. (1999): Information Affluence for the Developing World: The Vision and Work of World Space. *Development in Practice* 9 (4), 479–482.

Information governance

~ a holistic view of (company) organisational information activity management, a new-generation set of tools and solutions, by shaping processes and roles, and constant feedback due to control and monitoring.

Expressions used with the same, or very similar, meaning: information management

Expressions from related concepts: information planning, information systems, knowledge governance

Which category? A term that partially replaces information management in economy and management science.

The phrase in the language system is appreciating quickly. At the same time, there are barely any registered occurrences in local languages, it is not touched upon even in the literature of information management.

On the way to popularity, information management ate up every theory, concept, and operation related to information and knowledge like a hungry little animal, as because of the comprehensive process view, practically everything could be and was worth integrating.

After a while, information management started to ‘proliferate’ exactly because of this excessive complexity. First, it tore technology off of itself, the IT substructure that had a mere executive function in the examination of information processes and infrastructure maintenance, then activities that belonged to the spheres of ‘management’ and ‘governance’ separated slowly.

Governance, valued highly by the corporate governance school is, unlike short-range, operation, maintenance, efficiency, and service-oriented management, pays attention to the middle and long terms, the future, strategy, holistic approaches, the entire organisation and its environment, process redesign, design, balances, risks, and responsibilities. It considers structures, processes, methods of management in their entirety, with much more multidisciplinary embeddedness than management. (Thus the same ‘grow-through’ happens in the information area, as knowledge management partially becomes knowledge governance.)

There are many theories on the start and first use of the concepts. Kooper et al. (2011) are popularising it as their own invention, even though there were, around 2009–2010, numerous prophecies on how information governance will soon become a popular term. Meanwhile, McManus (2004) has been promoting the term for years, even though (to our current knowledge) it was not created by him, but by British researcher Dame Fiona Caldicott in 1997, creating six general

information governance principles in a healthcare IT environment, specifically for patient data (IGR, 2013).

EVALUATION AND RECOMMENDATION: The proliferation and spreading of the concept much like other similar expression is indicated by its variants appearing in more and more derivative expressions (Smallwood, 2014). Consultancy companies offer their information governance toolkits, and a movement-like professional initiative adopts it as its name (The Information Governance Initiative).

References:

- McManus, J. (2004): Working Towards an Information Governance Strategy. *Management Services* 48 (8).
- Kooper, M. – Maes, R. – Roos Lindgreen, E. (2011): On the governance of information: Introducing a new concept of governance to support the management of information. *International Journal of Information Management* 31 (3), 195–200.
- IGR (2013): The Information Governance Review.
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/192572/2900774_InfoGovernance_accv2.pdf [2015-03-26]
- Smallwood, R. F. (2014): *Information Governance: Concepts, Strategies, and Best Practices*. Wiley

Information group

~ a new type of imagined community in which media consumers and visitors of Internet news and social sites build information mini-worlds that, after a while, enable them to close themselves off from the world of content that does not match and contradicts what they are used to and what they accept, they become more and more introverted.

Expressions used with the same, or very similar, meaning: information community, information bubble

Antonym(s): well known, widely known information

Expressions from related concepts: information filtering, information monopoly

Which category? A professional-public phrase that expresses a fresh network sociology and communication characteristic.

The phrase in the language system is, for now, only used by experts and analysts.

In the increasingly complex information universe (or in another view: information mess), choosing what we let 'close to us', what we accept, how we orient ourselves, and what content we feel close to us is a question of choice and filtering. In order to get by, one must make decisions of selection, and these often make creating order or a stable information resource environment easier by simplification. Thus, step-by-step, closed groups that know of each other (but do not communicate) are created. In these groups that form the consensus related to events, news, going along almost unavoidably with creating an image of the 'enemy', and with interpreting scapegoats or responsibility together.

The basis of information groups is formed by pre-conceived knowledge, beliefs, convictions, and commitments on which the interpretations of new information and objects are built. And as there is strong loyalty both for the group members and the sources of information, conflicts with other information groups and sources are expected. After a while, group membership starts working as a filter that members use to perceive the world, maintaining social positions and beliefs by an almost automatic rejection of information that does not fit their world-view. Membership in an information group provides confidence and stability, and members may occasionally help, reinforce, and support each other outside the world of opinions, thus the weakening of identity, discouragement resulting from getting to know new information, or exiting a group may lead to feelings of being lost (Marshall, 2014).

Network researchers with strong critical thinking, armed with suitable methodology also uncovered that the data mining practices of the largest social sites and providers quickens and strengthens the creation of these information groups, as, with profiling and following personal on-line activities, the supplementary content displayed using systems of recommendation necessarily comes from a narrower circle: the closed formation thus created around users is called a 'filter bubble' or 'information bubble' (Pariser, 2011).

As everyone is the member of various information groups, bubble creation only leads to a strong distorting effect where a narrowing of real social relationships shape the forms of network presence, turning it into an exclusive world broken away from reality.

EVALUATION AND RECOMMENDATION: The phrase is clear and well-put, but its feeling reminds one of the phrase 'group of information', used to mark pieces of information that go together, and information bubble is used for something else in the world of web design. Accordingly, the meaning may be somewhat open to be expressed by a different, more ingenious phrase.

References:

- Marshall, J. P. (2014): The Mess of Information and the Order of Doubt. Global Media Journal, Australian Edition (2).
<http://www.hca.uws.edu.au/gmjau/?p=308>
Pariser, E. (2011): The Filter Bubble: What the Internet is Hiding From You. Penguin Press.

H

Information headphone

~ a device that could regulate the overwhelming acoustic stimuli; that we could use to turn our ears on and off.

Expressions used with the same, or very similar, meaning: information avoidance

Expressions from related concepts: information pollution, information noise

Which category? An uniquely created word for an idea not worth realising.

The phrase in the language system is not present, it is hapax legomenon.

In his 1976 book “Ideas in Progress”, Mircea Malita, the versatile Romanian scientist especially interested in futurology wrote a chapter about our ears being active 24/7 (unlike sight or hearing) due to the increased population density and new electronic media; our ears are bombarded 24/7 by acoustic information.

And as we have started to imbue machines with human attributes, machine parts that become parts of humans could help with this problem. Malita imagines placing two small devices in the ear canals that may be used to turn hearing on and off. The light of a lamp would demonstrate the current state: green – ON, red – OFF. A portable device that could be used to contact conversation partners, family members, the workplace, and information centres near or far would also be attached to the ear inserts. The device may be complemented by a supplementary memory that lets us store less important, temporary information. As soon as information gets there, our brain may relax, as it does not have to record a lot of information any more.

EVALUATION AND RECOMMENDATION: The term ‘information headset’ is not in use. Luckily, Malita’s idea had no followers, as it is not realistic. On the one hand, our visual organs are exposed to much more strain, on the other hand, from the foetal age, we are faced with a permanent background noise that we learn to live with. It is the absence of sound stimuli, artificially induced science, that causes a strong psychic strain. (The other parts of the concept today sound like something from the world of mobile communications.)

References:

Malita, M. (1976): Eshmék faggatása. Bukarest, Albatrosz.

Information healing

~ a pseudo-scientific school that teaches that, as biological functions that determine bodily functions may be traced back to information processes, healing should also be performed from the side of information.

Expressions used with the same, or very similar, meaning: information medicine, info-medicine, information treatment

Expressions from related concepts: sign medicine, symbol medicine

Which category? An everyday word association, strongly built on an intent to surprise.

The phrase in the language system is primarily known to members of the subculture interested in esotericism.

According to information healing theoreticians, the main explaining force for dysfunction in the human body are not biological or energetical processes, but pre-determined information factors beyond the material dimension, the 'information field' (which, as it is well known, is connected to the pineal gland).

The origin points, arguments, and 'information philosophies' of the various schools are remarkably similar. The differences are found in whether the healer uses light, mystical energy, painting symbols on the body, or information formulations (that contain the 'information' of the organ, tissue, or organ system). We must also note that behind the quasi-esoteric quackery on the healthcare market and the pseudo-scientific illness and healing philosophies, we also find the omissions of the scientific analysis of information. Information healers borrow their arguments and bombastic ideas from the para-scientific literature, where authors mix very different information concepts together without the appropriate methodological and critical apparatus to create quasi-theories.

EVALUATION AND RECOMMENDATION: Quackery is a legal issue; information healing, as a term, will follow the schools that it names. If they become more popular, we will hear more about them; if they will be forgotten, the expression will fade from use. Information doctors would still exist – however, they will not heal our bodies, but the malfunctions and erroneous settings of our information devices (hardware, software, applications).

References:

Jacobs, J.: The Speaking Body- Information Based Healing.

<http://www.selfgrowth.com/articles/thespeaking-body-information-based-healing> [2015-12-05]

A typical example: <http://www.lightandinformationmedicine.com/> [2015-10-15]

A multicountry „franchise”: <http://kahi-healing.hu/hu/> [2015-11-26]

Bio-Info-Source: <http://www.bioinfosource.net/szolgalatasok/informacios-medicina/>

Information heritage

~ the pieces of a national, ethnic, professional, or local community's physical and mental heritage that primarily served and were mainly used in a way that can be uncovered as part of the information culture of earlier ages.

Expressions used with the same, or very similar, meaning: information cultural history

Expressions from related concepts: information conservation, memory institutions, digitalising, Corpus Digitale

Which category? An as-yet dubious experiment at the creation of a collective conceptual category in the heritage preservation vocabulary.

The phrase in the language system is still finding its place, its occurrences are independent, but all point in the same direction.

Cultural heritage preservation is in the middle of international attention on both the national and international levels, partially with conceptual innovation, and partially with comprehensive initiatives – such as the UNESCO World Heritage that includes both natural and man-made heritage sites, or the Memory of the World programme focusing on the document heritage. Expressing the intangibility of cultural goods compared to the heritage objects easily located in museums, the concept of intangible cultural heritage was born, and later, so was intangible natural heritage, where ideas, knowledge, customs, and professions that regard the natural environment, flora, and fauna belong.

Heritage has been kept by memory institutions since the dawn of time; storage and presentation generally reflect the objective nature of the information carrier: archives of manuscripts, letters, books, magazines, maps, sheet music, photos, graphics, paintings, films, and audio recordings. For the shared management of these, ‘cultural’ and ‘intellectual’ have all been appropriate and sufficient until today.

The need for a new, ‘inclusive’ term came from the technology side. Museum, archive, and library experts all started to use the term ‘information preservation’ for conservation and digitisation. They did so in the knowledge that even if the physical information carrier gets damaged or destroyed, the carried information, saved in the virtual world, may remain. Therefore information heritage protection may thus be interpreted as expressing that the ‘pure’ information, separated from its carrier, is the object of heritage.

The Information Heritage Initiative, a part of the corporate social responsibility programme of American data specialist firm EMC means to provide aid in

this sense; along with its partnered institutions, to state-cultural, business-trade, and NGO-volunteer actors who ally themselves to save information that would be lost without digitalisation (EMC, 2016). This is why and how the use of geoinformation heritage came up instead of map archives (Yilmaz, 2016) – as behind the objective nature, there is an expansive network of devices, methods, procedures, knowledge, transmission channels, and customs, bubbles of information culture – all that without which the map as a cultural object could not exist. For our part, we consider another relevant interpretation correct. As for a profession or settlement, collection and classification of cultural heritage follows special rules, it may be reasonable to archive, collect, store, or exhibit the objective and intellectual memories of the information environment and information culture that connect various communities. A post museum, in reality, tells us about the history of an information institution, as behind a museum of typewriters, one can discover the typist. Along the larger families of the information-natured cultural heritage objects listed earlier, the information techniques, methods, tools, and artefacts embedded in their environments as information objects seem unassuming, and they are less talked about. Where they carry and embody the information functions: boundary stones, signposts, symbols and signs in public places, the shadoof-language of shepherds, beggars' signs scratched in walls, guild signs and invitations, various databases, encryption and decoding devices, notebook lining machines.

EVALUATION AND RECOMMENDATION: As both, supposedly possible, interpretations are in a pathfinding phase, it is hard to say which may develop into a term that is widely accepted in the heritage field.

References:

Information heritage initiative (EMC)

<http://www.emc.com/leadership/articles/information-heritage-initiative.htm> [2016-05-26]

Yilmaz, I. (2016): Geo-information heritage contained within *Kitab-ı Bahriye* (Book of Navigation): The Sicily Island Journal of Cultural Heritage 1.

<http://www.sciencedirect.com/science/article/pii/S1296207415001946>

Hidden information

~ a piece of information that is necessary for fair competition, but is unknown to one of the economic operators, without which, the other party may achieve or achieves a market advantage.

Expressions used with the same, or very similar, meaning: lack of information, imperfect information, partial information

Antonym(s): complete information, information glut

Expressions from related concepts: information asymmetry, information games, information allowance, information benefit

Which category? A term of information economy, embedded in game theory.

The phrase in the language system is used solely in economic theory literature.

One of the underlying drivers of information asymmetry. When out of two economic operators, the information possessed by one party remains unknown to the other party, the competition becomes unequal, that typically results in a more advantageous situation for the party that possesses the information. The result of the hidden information may, in the most extreme cases, be a massive profit, or loss of money – depending on who possesses the information –, but it may result in the bankruptcy of an operator, or the creation of a market monopoly.

Textbooks on hidden information present innumerable typical situations. The employer has more information on the work to do than the job seeker that applies to do it. The seller is better informed about the product to sell than the buyer. The manufacturer or distributor know less about the buyers willingness to buy and their options than the buyers themselves.

Someone in middle management who hides information from top managers, or managers who keep the key data of the company from employees. Recently, some consider theoretically public data that refers to commissioning, competitive, and order completion relationships of the state or municipalities and business organisations that should be shared publicly, but the media or the opposition cannot learn about them. Lacking these, neither society, nor business rivals will have an appropriate oversight of these.

There are examples to the contrary, but in most cases, typically the seller possesses hidden information. And although this typically is beneficial, producers often attempt to eliminate this imbalance in order to have a clean competition. They can guarantee it with just contractual conditions, e.g. a multi-year warranty, a perfectly accurate service life, or by classifying the product or service into a category.

EVALUATION AND RECOMMENDATION: The term is a part of a family of coherent and stable technical terms, its load may stay more or less unchanged in the next years. If consumers manage to develop and utilise multiple countering techniques, to tip information games in their favour, we may encounter it more frequently, even outside the literature.

References:

Caillaud, B. – Hermalin, B. E. (2000): Hidden-Information Agency.
<http://faculty.haas.berkeley.edu/hermalin/mechread.pdf> [2015-07-08]

Information hiding

1. *~ steganography, the science and art of hidden messages.*

Expressions used with the same, or very similar, meaning: encryption, cryptography

Antonym(s): open (public) information

Expressions from related concepts: coding, cyphering, deciphering

Which category? The phenomenon is expressed by a term, but in spoken language, we occasionally use a verb-based structure that expresses the activity well (the hidden information, hiding the information, etc.).

The phrase in the language system does not have a fixed form, it is created uniquely in a form that fits the meaning to be expressed.

2. *~ the ‘background interface’ of a computer program that is not visible and not known to users – but contains useful information regarding the steps of programming and changes, that a developer or expert can utilise and use without modifying the program’s open interface.*

Antonym(s): public manual

Expressions from related concepts: programming technology

Which category? An information technology science term.

The phrase in the language system is only known to and used by programmers.

1. The Greek steganography means “hidden writing”. It refers to the method of hiding a message in an innocent-seeming picture, text, sound recording, video, or other data carrier that is accessible to everyone in a way that only people who know what they are looking for can find it. No key is necessary to solve it (it is no encryption), as the message is in front of our eyes all along.

In the last two thousand years, innumerable ideas have been used to hide information – all the way from tattooing messages on the bald head of a servant, then letting hair grow out again. Due to new technologies, it appeared not only in texts, paintings, pictures, and works of art, etc., but in various mediums, sound- and video recordings. As part of computer culture, steganography continued to develop continuously, utilising the opportunities in the digital world: the relevant sites listed dozens (!) of ways to hide the information.

2. David Parnas, a pioneer of software development, ‘re-created’ the phrase in 1972, introducing it as a programming technique term. Since then, programmers create two interfaces during programming. One of these is the ‘layer’ – may it be an editing programme, a game programme, etc. – that opens on screen for users. The other one is the programming interface where program codes may be accessed, read, and modified. This latter one is accessed only by programmers; only they know about its existence. The existence of the two interfaces is important because any modifications can be performed without the user experiencing anything about it.

EVALUATION AND RECOMMENDATION: Although there are similarities other than the identical words in the everyday and the IT meanings, we discuss the two separately because in secret messaging, there is an information ‘game’ between people with opposing interests, while programmers hide information in a background interface in the interest of users. There is little chance for the two meanings to ‘meet’ somewhere and get mixed up, but it is good to know the difference.

References:

- Arvind, K. – Pooja, K. (2010): Steganography- A Data Hiding Technique. International Journal of Computer Applications 7 (19).
<http://www.ijcaonline.org/volume9/number7/pxc3871887.pdf>
- Parnas, D. (1972): On the Criteria To Be Used. In: Decomposing Systems into Modules. Communications of the ACM 15 (12), 1053–1058.
<http://www.cs.umd.edu/class/spring2003/cmsc838p/Design/criteria.pdf> [2015-09-26]
- Sebasta, R. W. (2012): Concept of Programming Languages. Pearson, 476–483.

Information history

~ the relative fresh school of history science that approaches traditional historical questions by describing them in an information-centred way and their (re)interpretation, and also asks new historical questions from the information viewpoint.

Expressions used with the same, or very similar, meaning: historical informatics, communication history, knowledge history

Expressions from related concepts: cultural history

Which category? A high-level scientific term that is significant for both historiography and information science.

The phrase in the language system has barely spread as even the school it names is fighting for acceptance.

Realisation of the necessity of information history happened simultaneously in British (Library and Information History Group) and Japanese (Japan Association of Library and Information History) library history workshops in the mid-90s. Both professional groups accepted that considering their place in science taxonomy, book and library history may be considered fields of a comprehensive discipline, just like the cultural history of information technology, various information professions and institutions, or information system types.

By now, there are entire magazines, conferences, and university courses on information history, and monographs discuss the exciting research possibilities in the school (Weller, 2008, Z. Karvalics, 2004). The scope of typical information history studies ranges from the information history approach of a temporal of physical time or area/community to the study of the entirety of world history. Modelling and dating the economic, social, and cultural processes that had led to the creation of information society is difficult for many historians and sociologists. Information itself has its own story, from the point where, at a certain point of the developmental history of life, primitive multi-cell organisms capable of information behaviours had appeared.

And finally, the history of sciences that consider information and information technology may also be uncovered (it is very rich, but ‘top-heavy’ for the history of computing science, literary tradition, with lots of unexploited opportunities): information history, as a receptacle, contains all listed approaches.

EVALUATION AND RECOMMENDATION: We are convinced that working on the areas of science that the term ‘information history’ washes away is important and timely. More awareness is necessary for the school to become more important,

but based on current tendencies, it seems certain that this will happen, and than it will diffuse in a wider range than the professional discourse.

References:

- Weller, T. (2008): Information History – An Introduction: Exploring an Emergent Field. Chandos.
Z. Karvalics L. (2004): Bevezetes az informaciotortenelembe. (Introduction to Information History) Gondolat, Budapest

Information hoarding

~ self-serving information collection without quality selection, that is dumped in bulk on a storage device (these days: external drives, hard disks, or the “cloud”), without hope for future use.

Expressions used with the same, or very similar, meaning: information addiction, information hunting, information gathering

Antonym(s): information avoidance

Expressions from related concepts: information pathologies, information diarrhoea

Which category? Although at its first appearance, it entered the language as a mental hygiene term, by now, its meaning has become more everyday, and healthy people use it ironically to reflect on their own habits. Its appearance in the company information management environment is again leading it towards professional use.

The phrase in the language system is well diffused in English-speaking countries, but rarely used in other areas, as the phenomenon is described with other words, or it is paraphrased.

Manic hoarding is a compulsive behavioural disorder, it leads to worthless and useless things flooding physical space. Accordingly, information hoarders are people who chose information objects as the object of their useless desire of collecting. Self-serving, indiscriminate hoarding had existed in the age of books, but its golden age arrived with the age of the Internet as storage space on tabletop computers grew radically, and easily writeable DVDs, then external hard drives with huge storage spaces appeared.

Information hoarders drown in their own digital footprints, overload their computers with self-produced data, occasionally backing up digital pictures in multiple folders, never to open many of them again. They store so much downloaded music, movies, TV series, digital books, programmes, pictures, and databases as if they were preparing for a post-apocalyptic life. Their incoming e-mails multiply without being read and filtered. They do not delete e-mails even when they have forgotten why they had saved them at the first place. In the ever-growing database, it takes longer to find something than to re-download it, or to find it online. Without the appropriate structure and metadata, the state of ‘cyber-clutter’ becomes permanent.

Although there is a medically diagnosed version (Information Hoarding Disorder), digital hoarding is not as severe a mental disorder, as its predecessor, but it doubtlessly puts affected people into a disadvantageous situation. Because of

the opportunities offered by the increased storage capacity, less selection decisions are to be made – and in parallel, the price to pay is not the slowing down of devices, but the unnecessary strain on our minds.

The expression is also embedded in the corporate information management literature. In part, they use it for colleagues who ‘sit’ on information and do not share it with others (Stark, 2014), and in part, for information hoarding bosses. These latter believe that the way to reinforce and maintain their power is by making detailed notes on everything and everyone; then, they often gain a situation advantage by using the sea of data they collected (Knippen et al, 1991). The price is the suffocating atmosphere of fear and distrust.

EVALUATION AND RECOMMENDATION: The phenomenon named by the expression is rare. Whether the use will be more definitive in the literature of psychology or management will be decided by which area will the discussed behavioural disorder be stronger at.

References:

- Stark, P. B. (2014): Ban Information Hoarding in your Organization, September 2. Blogpost <https://peterstark.com/ban-information-hoarding-organization/> [2015-04-22]
Knippen, J. T. – Green, T. B. – Sutton, K. H. (1991): Dealing with an Information-hoarding Boss Management Decision, (29) 7.

Information hotspot

~ a physically localisable node where important information that aids with orientation appears, or important connections become recognisable because of the visualisation.

Expressions used with the same, or very similar, meaning: information node

Expressions from related concepts: information value chain, information experts, information efficiency

Which category? A professional-public phrase with a meaning that is still being formed.

The phrase in the language system is virtually unknown.

The expression was born as a result of an interesting development of meaning. Hot spot is originally a geological term: it refers to places of the Earth's crust under where intensive magma flows are found. The term 'biodiversity hotspot' has been used since the late 80s for regions of the Earth that are destined to be destroyed without conscious protection, and it has been used since the age of wireless Internet for places where, using devices that diffuse the radio signal in an area, network access is provided.

According to Peter Scupelli (2009), who defined information hotspot in a workplace (primarily hospital) environment, three elements must be present in the same physical space:

- people (users) who would like to receive or acquire information
- public screens that contain constantly refreshing information
- experts who answer questions personally, refresh information, and solve any problems

Still, the expression became famous in a different (although still medical) context. A GP from Camden, Jeffrey Brenner was trying to find citizens who produced the highest cost to social security. He made a map, then allocated colour codes to every city block depending on the hospital costs utilised in the place in question, finding the well-localisable places where the numbers are the most critical. He called these "information hotspots" (Gawande, 2011), which may be used to plan up-to-date, personalised interventions. Similar maps and actions have also been created for crime prevention, as well, but it is hard to tell whether the creatively used phrase will gain hold.

EVALUATION AND RECOMMENDATION: For now, it is more likely that, as memory of the Camden experiment fades, it will appear in a new context.

References:

- Scupelli, P. (2009): Designing information hotspots for surgical suites: How architecture, artifacts, and people's behavior converge to support coordination. Ph.D. dissertation, Human-Computer Interaction Institute, School of Computer Science, Carnegie Mellon University.
- Gawande, A. (2011): The Hot Spotters, The New Yorker, January 24.
<http://www.newyorker.com/magazine/2011/01/24/the-hot-spotters> [2015-03-27]

Information hunger

~ an innate, insatiable desire to gather new information.

Expressions used with the same, or very similar, meaning: infomania, information searching behaviour, interest, desire for knowledge, thirst for knowledge, hunger for stimuli

Antonym(s): information diet

Expressions from related concepts: information obesity, information foraging

Which category? A psychological term, also used by communication sciences in a modified meaning.

The phrase in the language system is well known and often used, occasionally in the “hunger for information” form.

Since the mid-sixties, it has been a cliché that people have not only an innate drive to attain stimuli and information, but this hunger is the root and driving principle of behaviour itself (Fowler, 1965). Furthermore, the brain selects between pieces of information, and pounces on ones that are still unknown to it. The unusual, the incongruous, and the mysterious are at an advantage – until we get used to them, piece them together, and untangle them.

When the brain notices a possible new piece of information, its level of wakefulness increases. When it manages to annex (understand) the information, the feeling of being full is short-lived, the brain starts looking for new information almost immediately. The continuous information hunger is only superseded by physical hunger and other immediate biological necessities.

Sociocultural interpretation has built upon this ‘bio-physical’ layer as a secondary one: the source of hunger is not basic any more, but a learned, assumed, conditioned behaviour. It is the content of information that has the effect of wanting to own it again and again on us.

And finally, communication researchers use it in the sense that information hunger is the result of an earlier communication (for example, a figure of speech in a convincing speech). One may create such suspense in the audience that they start to go hungry for what comes next (Adler and Rodman, 2008) – like waiting for the rhyme after hearing a line from a poem.

EVALUATION AND RECOMMENDATION: The metaphor is smart, expressive, and easy to understand. Its basic meaning, when first heard, is clear to everyone, and its variations do not inhibit understanding it.

There has been an attempt at contracting it (information + hungry = infogry), but it has failed, and we are glad that it has not diffused.

References:

- Fowler, H. (1965): Curiosity and Exploratory Behavior. New York, MacMillan.
- Adler, R. – Rodman, G. (2008): Understanding human communication. 10th ed., New York, Oxford University Press.

Information hunting

~ the goal-oriented research for information important for the user on the Internet using an optimal search technique.

Expressions used with the same, or very similar, meaning: information seeking

Antonym(s): info-phobia

Expressions from related concepts: business intelligence, informative librarianship, information hoarding

Which category? A permanent expression to describe a typical activity.

The phrase in the language system is gaining strength after many occasional uses, especially as information hunter is more and more talked about as a profession.

Among the invaluable information collected on the Internet, it is hard to find data that is valuable to us, and the reliability of results that are considered may also be doubted. Anyone can upload any content to the Internet, but so far, the measure of control over them is not satisfactory by far. Therefore validity is still not comparable to that of printed sources.

Based on this, experts rightfully claim that for Internet searches, the primary goal is awareness and appropriate foresight. Along with truncated searches in various search engines, one must strive to use sites that relate to the topic of the search, and have an appropriate reference. These may include major scientific periodicals, various library databases, or the websites of companies and services we know well, depending on the kind of information we need.

In order for the user to get the most appropriate information in the on-line world, three directions of professional help may be called upon:

- the pre-forming, classification with information filtering programs, categorisation, metadata tagging of information sets, using which, even less prepared users can gain information in an information hunt.
- Proactive support: advice and tips, offering supplementary opportunities based on analysis of information searching behaviour (presenting information closely related to the sought information based on other people's similar searches, ensuring the re-discoverability of results offered earlier)
- Employing an independent, specialised information hunter who, knowing the opportunities, performs information hunting quickly, efficiently, as a service

EVALUATION AND RECOMMENDATION: Information hunting is an ingenious, well-put expression. The analogy is almost complete, as the information searching user

or specialist goes into the forest much like a hunter in the forest. Even in that occasionally, an enterprise is driven by the desire to acquire a single piece of information, much like when a hunter only wants to shoot the dedicated animal, yet in other cases, there are no pre-selected information sets to acquire, much like when hunters shoot whatever shows up. If information hunting as a profession will grow more prominent, the word may grow even stronger roots in the language system.

References:

Stefanidis, K. et al.: Information hunting: The many faces of recommendations for data exploration.
<http://wp.sigmod.org/?p=1580> [2015.07.18.]

I

Imperfect information

~ the concept, imported from game theory into economic science, refers to the situation in which parties (players, producers and consumers, and market rivals) possess the same information regarding the same thing.

Expressions used with the same, or very similar, meaning: lack of information, hidden information, partial information

Antonym(s): perfect (full) information

Expressions from related concepts: information asymmetry, information games, information allowance, information benefit

Which category? A term of information economy, embedded in game theory.

The phrase in the language system is only used in the economic theory literature, but as it is quite distant from the everyday interpretation of ‘imperfection’, an in-depth explanation is especially important in a more popular context.

In game theory, most games are considered imperfect information. In these games, the player does not know the previous steps taken by the other party or parties. Opponent decisions remain hidden up until the end of the game, or possibly even forever, such as in poker and bridge.

In economy, the seller generally has more information than the buyer, as they are more at home in the world of products and services they sell. Accordingly, they know more about quality, quantity, and the other qualities of the product and service.

On the other hand, buyers have limited contact with the goods, thus accordingly, they receive less information. It is a similar situation on the job market, as well. The prospective employee about their own skills, diligence, and capacity, while the employer can only have ideas about them. At the same time, the employer knows the expected tasks, while the prospective employee has limited information on them.

Based on the listed examples, it is clear how information distribution may become and becomes unequal between the different parties – i.e. how information asymmetry comes about.

However, regardless of the imperfect information system resulting in a benefit for one of the parties, if the asymmetry is exaggerated or permanent, in the long run, the spiral of distrust may also have a negative effect on the beneficiary.

EVALUATION AND RECOMMENDATION: The term is a part of a family of coherent and stable technical terms, its load may stay more or less unchanged in the next years. Along with the economic one, the imperfect information games between citizens and the government also seem to become more important, therefore intensity of use is expected to increase in this field.

References:

Osborne, M. J.; Rubinstein, A. (1994): Extensive Games with Imperfect Information Chapter 11.
In: A Course in Game Theory. Cambridge M.A, The MIT Press.

Information implosion

~ the opposite of information explosion: a fast shrinking of the information set. As a result of an intentional intervention, all this serves better utility, but if it happens for reasons outside their influence, it may have an effect of losing knowledge.

Expressions used with the same, or very similar, meaning: information black hole, loss of knowledge

Antonym(s): information explosion

Expressions from related concepts: information management, information planning

Which category? A failed technical term. It did not become part of the discourse, or if it did, the same meaning is circumscribed differently.

The phrase in the language system rarely appears, it is barely used

The father of scientific information provision, Eugene Garfield published an exciting article in a chemical journal in 1968. He used the growth of the number of journals to demonstrate how an information explosion can go along with information implosion.

Excerpts, abstracts, figures, catalogues, and annotated bibliographies decrease the number of information that one must be faced with in order to arrive at meaningful, relevant pieces of information.

Along with trained information experts and a positive approach pointing to new information services, a much more comprehensive, very different approach to information implosion also appeared in the late 80s. Kansas plant geneticist Wes Jackson believes that because of the technical civilisation and the mediatisation of experience, having more data than ever before is no use, as individuals lose an immense amount of information regarding nature (e.g. the weather, environment, behaviour of plants and animals) that they had possessed before. This is alarming, as it means the loss of our abilities to understand basic processes, and our distance and isolation from nature can have fatal consequences for the future. Farms empty, and people who still can tell when they should plant the seeds from the weather gradually die out.

With the mechanisation and industrialisation of agriculture, the mass of experience that characterised primitive peoples and farmers for millennia will be lost. Accordingly, Jackson believes it is an error to be worried about the information explosion running wild, because the information explosion is much more of a danger for us.

EVALUATION AND RECOMMENDATION: In English, it has been in use for almost half a century, but for many languages, no good translations were yet found. The opposite of explosion for physical objects is a decrease of volume with a speed that is similar to an explosion. Therefore we suggest the use of shrinking instead of ‘collapsing, crumbling’ in the local version of the expression. However, in our opinion, other expressions express the content better (the words Garfield and Jackson chose weren’t the luckiest), therefore we believe it will fade from use sooner or later.

References:

Garfield, E. (1968): The information implosion. *Chemistry* 7, 24–31.

<http://garfield.library.upenn.edu/papers/156.pdf>

Jackson, W. (2011): The information implosion. In: *Nature as measure: the selected essays of Wes Jackson*. Counter Point, 111–116.

Information inequality

1. ~ a difference in access to information resources, that stems from, and results in, social inequalities.

Expressions used with the same, or very similar, meaning: digital inequality, digital division

Antonym(s): information community, information public good, information asymmetry, information power

Expressions from related concepts: global information society, social exclusion, the information rich and poor

Which category? A professional-public phrase, secondary in use to the more popular 'digital divide'. The two phrases seem to share the workload: in the strategic-political vocabulary and the press, digital divide, in social science texts, information inequality is used.

The phrase in the language system is, after a stormy decade, used less.

2. ~ a base concept in estimation theory and mathematical statistics, that makes it possible to determine the lower limit of the undistorted variance of a certain parameter may with relatively mild conditions.

Expressions used with the same, or very similar, meaning: Cramér-Rao inequality, Cramér-Rao lower bound

Antonym(s): (inverse) Fisher information, Fisher information bound, Fisher information index

Expressions from related concepts: probability variables and estimates

Which category? A formally defined technical term, with its own mathematical apparatus and system of formulae.

The phrase in the language system only appears in the professional community using the correlation.

1. In the 1960s, as the UN and UNESCO put it on the agenda multiple times, developing countries, led by Africa, started a movement for the creation of a new information and communication world order. There had been a clear gap between the news agency news feed and media representation of developed (overrepresented) and developing (under-represented) countries, and in the way differences in information and knowledge access started to grow between developing countries that lacked the diverse basic information institutes and central countries that pos-

sessed decades of experience in using professional statistic, library, meteorology, scientific, and other information services.

The concept of information world inequality was born here, but it gained a new face in the first half decade of the mass spread of the Internet (1995-2000). Social scientists were quick to notice and describe detail how information differences come about between various social groups (city and countryside, well-off and poor, old and young, etc.) and countries and groups of countries, and their dynamics (thus the expression is used more and more in the plural, as information inequalities).

First, the differences only showed up in Internet and digital culture penetration measures, the existence or lack of Internet telecommunication infrastructure, and the spatial and temporal patterns of computer ownership. Later, available bandwidth and physical access became the key issues. And when there is a solution that allows access through some technical means (e.g. in telehouses, community access points), the cognitive gap got in the forefront: who possessed the educational and socio-cultural capital to utilise the Web as a resource to better their own lives (value-creating network use)?

2. The two American and Indian mathematicians who gave the phenomenon its name published their publications after the Second World War, with a difference of only a year, and as such, they wrote their names in the history of estimation theory, and became permanent fixtures in every textbook and educational material.

EVALUATION AND RECOMMENDATION: The two identical word forms with different meanings do not disturb each other in the language system, as there is a large distance between them.

References:

- Schiller, Herbert I. (1995): Information inequality Routledge,
Rao, C. R. (1945): Information and the accuracy attainable in the estimation of statistical parameters.
Bulletin of the Calcutta Mathematical Society 37, 81–89.

Information influence

~ the ability to change opinions and behaviour in a small group or on a higher community level, where effects are attainable through information content that is dosed in the appropriate way and through appropriate channels from the repertoire of mechanisms that can create change.

Expressions used with the same, or very similar, meaning: persuasion propaganda

Antonym(s): information blindness, information avoidance

Expressions from related concepts: information behaviour, group pressure, group think, information community, information exchange

Which category? A rarely used social psychology term, occasionally used in an everyday, somewhat different sense.

The phrase in the language system shows up randomly, in close professional circles. If the meaning does not clarify (or get back) to its original meaning or its improved version, its slow fraying may be expected in the medium run.

Social psychology started to differentiate between normative and information influence in the late 70s, studying intergroup opinion influencing in more and more detail. From the information point of view, the difference is that the normative side means the inclusion, mobilisation, and application of pre-existing, conventional, highly processed information sets that are accepted to be valid for a number of types of cases, as opposed to the case-by-case, occasional, point-like arguments that appear as new pieces of knowledge related to the actual subject, context, and sphere of interpretation of the argument. The social psychological problem is the understanding and description of modelling, based on the actors' social status, the group make-up, and the subject of forming opinions, when, to what grade, and why types of influence are realised. Exceptionally sensitive areas include the teacher-student (Soósne, 2003), parent-child, and influencer-peer group pairs.

It is clear that norms themselves are information sets, therefore there is a sense of tautology around the phrase, yet this division of the information world is possible, and may even be necessary in order to shed light on certain connections. In this sense, the concept could be taken forward from personal relationship spaces to the virtual social spaces of computer-mediated communication, where similar questions come up regarding the quality of arguments, the credibility and trustworthiness of the source of arguments (person or reference), and the utility of pieces of knowledge and wisdom drifting in the flow of communication, both in on-line debate and in controlled knowledge transfer (Fadel, 2009).

EVALUATION AND RECOMMENDATION: Examining the information influence of financial analysts on stock market prices or looking for Russian information influence signs and results in former Soviet states go beyond the valid domain of interpretation (Policy, 2015). Discourse, social media, and a way back are not present in the information flow in any of these cases. We cannot identify group members in roughly equal situations. Therefore using the expression as a category may be misleading, but it is usable in the everyday sense, as we clearly understand what it means (the fact that there are a number of alternative solutions that name the same phenomenon is another issue entirely).

References:

- Bandura, A. (1977): Social learning theory. Englewood Cliffs, NJ, Prentice-Hall.
- Fadel, K. J. (2009): Information Influence in Mediated Knowledge Transfer: An Experimental Test of Elaboration Likelihood. *International Journal of Knowledge Management* 4.
- Stegmann, U. (szerk.) (2013): *Animal Communication Theory: Information and Influence*. Cambridge University Press.
- Policy of reducing Russian Information Influence brings first results (IISEPS, 2015)
<http://www.iiseps.org/?p=2927&lang=en>

Infocommunication

~ the 'small world' of computers and telecommunications, contracted and treated as a unit. The shortened version of information and communication technologies (ICT); in the form 'infocommunications industry', it also encompasses the world of digital content providers, and cultural and media products.

Expressions used with the same, or very similar, meaning: telematics

Expressions from related concepts: telcosmos, information sector, creative industry

Which category? It is moving from the economy-political-technological professional-public vocabulary to the social sciences vocabulary (calling up problems), and to the public discourse (where its use is relatively straightforward).

The phrase in the language system is undergoing a change. Its use in its old, accurate meaning is decreasing, yet its new meaning is problematic. A professional dialogue may help clear it up.

In the late 70s, French strategic future designers started to realise that telecommunications and informatics are convergent industries: they are getting closer to each other, and should be handled together, as a single unit. Therefore, in their book-length report to the President (that was published, barely more than a year later, in other languages, as one of the key works of the political history of information society), they created the expression 'télématique' from 'telecommunications' and 'informatique'. (The French origin is not unimportant, as in English-speaking countries, informatics is generally called 'information technology/IT', and that would have been more difficult to use in a portmanteau. 'Informatics' is used here in a very narrow sense.)

However, after the millennium, 'infocommunication', which created the same meaning from the other halves of the source words, triumphed. In a short while, it forced out telematics (or at least reduced it to the area of traffic automatization), and it took over the original industrial-technology interpretation of telematics.

However, after a short while, people began to use it in a more extended sense. The convergence process that drifted the two areas together once, kept on going, creating more and more 'hybrids'. (For example, this is how 'cognitive infocommunications' were born, where the extra part is cognitive science, referring to the inclusion of the human side, the user point of view.)

EVALUATION AND RECOMMENDATION: An uniquely interesting development regarding the expression is that in its original form (where it made the common han-

dling and discussion of two technological and industrial sectors possible), it had a use, a need, and an added value (even if it overtook an earlier, more unique and shorter expression that covered the same meaning) However, its use as ‘infocommunication’ became more and more inadequate as soon as it left the technological base in scientific analyses and appeared as part of the information sphere. Because here, it does not refer to the contraction of telecommunications and information science, but information and communications. However, this is a disorienting tautology: communication is already an information-based action, putting them in the same expression means that the concept reflects the phenomenon it wants to discuss badly. It is also not lucky that, while the complex we attempt to trace with linguistic methods is getting more and more comprehensive, in many cases, an old expression (or part of an expression) attempts to cover the entirety of the new meaning.

References:

Nora, S. – Minc, A. (1978): *L’informatisation de le Societé* Présidence de la République

Infodump

~ placing a pointless, functionless, unnecessarily large amount of information as part of an otherwise well-constructed content that creates an effect that is the opposite of the intent of the communicator.

Expressions used with the same, or very similar, meaning: information waste/trash

Antonym(s): well-edited and well-timed information

Expressions from related concepts: information obesity, information dump

Which category? A piece of conceptual innovation, meant for everyday use, that identifies a typical phenomenon that occurs in multiple situations.

The phrase in the language system only became popular in narrow, well-identified groups, accordingly, most in the speaking community have not even heard it.

This expression became very popular in various on-line subcultures in recent years. Its general meaning is outlined by special meanings, very similar to each other. It is used as part of the etiquette of electronic mailing, where it is bad form to answer a short question with a long, copied texts instead of a similarly short answer – and anyway: leave the value-added work of processing in a lack of summarisation and excerpting. In product descriptions, it is the name of the mass of bulk information, often presented in an unreadable form, communicated to the detriment of the important moments of assembly or proper use. It is most often used in critiques of bad introductions to novels and movies, where the background information necessary to understand the plot or the characters is ‘dumped’ too densely, in a way that confuses understanding.

In many language areas, the word-by-word translation did not diffuse; instead, use of the English original became permanently popular in conversations and the blog entries of netizens. The reason behind this is no doubt that the expressions ‘information mess/information garbage’ are used in different, much more generalised senses, and ‘information dump’ also refers to a similarly different aspect (a large amount of information communicated in a short time).

EVALUATION AND RECOMMENDATION: we accept the term as a useful and ingenious piece of linguistic innovation. And as in other languages, its English version has diffused, we do not think that local versions should necessarily take over the strange-sounding ‘infodump’: but when the expression must be explained and interpreted, a local version with more or less the same value is necessary. And as the visual world of dumping trash is close to the original, there is no confusion

of the meaning: after cleaning up the dump, we feel an information order, suitability, cleanness.

References:

<http://dictionary.reference.com/browse/infodump>

<http://hu.urbandictionary.com/define.php?term=info+dump>

Infoganda

~ news and informative articles, or even literary works and dramas that serve a communication will of bending people towards a political, religious, or other view in the guise of mere information provision.

Expressions used with the same, or very similar, meaning: propaganda communication, pseudo-information

Antonym(s): objective communication

Expressions from related concepts: disinformation, fake information, infornography, infotainment, fact-esque, information advertisement

Which category? An unique portmanteau word.

The phrase in the language system has diffused step-by-step, it is more and better known. Due to its strange ring, it has not diffused at all in many countries.

The word, a portmanteau of ‘information’ and ‘propaganda’ started to show up sporadically in the early 2000s, mostly in popular media and on-line blogs. It had hardly been known until 2004, when American actor and comedian Rob Corddry popularised it in Jon Stewart’s late night talk show. Afterwards, the expression spread like wildfire in political and scientific circles, mostly as a caricature of the information practices of the Bush administration. Although Corddry did not come up with the term, it is still attached to his name, and even the tenth anniversary was commemorated (Morrill, 2013) – despite the fact that it had been used as early as the Gulf War. Infomercials came to be in the United States in the same era, the early 1990s; this genre encourages people to buy, serving business interests, while presenting a façade of neutrality. Its tools include made-up names, scripted interviews with average-looking extras, and meaningless statistical data.

Infoganda is the political and religious version that is reminiscent of various, historically well-known, ‘classic’ forms of propaganda, but is actually a subclass that ‘packages’ persuasive intent into information or literary-minded content. These underlying messages are occasionally clear, in other cases, previous information or knowledge may be needed to understand them. The diffusion of the expression is also reflected by the fact that it is used in more and more variations. Environmentalist-film-maker Kenny Ausubel writes of infoganda wars in a recent book, while British journalists criticising the European Union media policy re-named their target the European Ministry of Infoganda in 2013.

EVALUATION AND RECOMMENDATION: The meaning of the expression is clear and easy to grasp. It became better and better known in the language of politics and

media. Its diffusion, however, seems to have come to a halt, it will possibly not gain a foothold in multiple linguistic areas.

References:

Morrill, B. (2013): Infoganda, ten years later. Daily Kos, March 21.

<http://www.dailykos.com/story/2013/3/20/1195622/-Infoganda-ten-years-later>

Kennedy, P. D. (2006): Infoganda & the Withering of Scepticism.

<http://www.paul-kennedy.com/Infoganda.htm>

Ausubel, K. (2012): *Dreaming the Future: Reimagining Civilization in the Age of Nature* Chelsea. Dream Publishing.

Infogasm

~ the euphoric feeling caused by finding or recognising a long-sought or suddenly exciting or relevant piece of information.

Expressions used with the same, or very similar, meaning: information junkie

Antonym(s): infowank, information avoidance

Expressions from related concepts: information hoarding, information discovery, flow, infomania, information hunt

Which category? Urban slang term.

The phrase in the language system had escaped this narrow circle and started to diffuse, primarily among information architects and infographic artists, but it also appears among the user comments of numerous popular websites.

The word, a contraction of information and orgasm, was submitted to the Urban Dictionary on-line slang dictionary in 2007, its attribute version is infogasmic.

The new word that expresses both the thing and the special feeling that accompanies it refers to an experience that many have already had. It is the equivalent of Mihály Csíkszentmihályi's 'flow' concept in information space, it may be attained and experienced both as the result of conscious search and accidentally. More and more people experience it on social media and content sharing sites (especially Pinterest and Instagram), and they do not hesitate to voice their experiences.

Alongside them, makers of artistic and information-condensing infographics have inserted the term into their vocabularies to reflect the 'aha-experience' caused by a beautiful, attractive, thought-provoking work of art (Larsen, 2013).

Since 2014, there has been a Hungarian blog titled 'Inforgazmus', but this page only localised the ingenious word instead of importing its original meaning.

EVALUATION AND RECOMMENDATION: Interestingly, in English, the 'r' found in both orgasm and information did not make it into the portmanteau, while other languages chose to include this better-sounding version ('inforgasm').

References:

<http://hu.urbandictionary.com/define.php?term=infogasm&defid=2380601> [2016-04-26]

Larsen, R. (2013): Lecture without a title

<https://www.youtube.com/watch?v=4iN6zPbtHs> [2016-04-26]

Candellaria, M. (2012): Infogasm: Why, When, and How to Use Infographics

<http://www.writermc.com/2012/11/13/infogasm-why-when-and-how-to-use-infographics/> [2016-04-26]

Infographics

~ the spectacular visualisation of complex information content and large masses of data that makes quick pattern recognition possible: graphs, drawings, figures, images, and text used together, with the utilisation of various visual languages.

Expressions used with the same, or very similar, meaning: information design, visualising information

Antonym(s): basic data visualisation (sequences, lists) without visual added value

Expressions from related concepts: information architecture, information arts, information aesthetics, information design

Which category? It means both the ‘genre’, the activity that creates artistic visuality, and the final product, the creation itself at the same time. Infographic artist is a separate profession now, in this professional community, the current step is the naming of the various types of infographics.

The phrase in the language system is spreading explosively.

Infographics are a field of applied graphics. The non-narrative, visual presentation of data, pieces of information, or knowledge elements, that represent its subject so that its aspects that are relevant in some way are interpreted and accessed easily, or at least more easily, by the viewer.

We may consider, with some restrictions, the more or less overlapping, related concepts of infographics, information design, information architecture, and information visualisation (a.k.a. data visualisation). Although it uses clear shapes, it is capable of presenting complex relationships in a small space. The primary areas of infographic use are the educational-scientific, telecommunications, and business spheres, where infographics can have more of an effect on the recipients’ heads compared to simple text or publicity photos.

Works that overview the history of infographics sometimes discover their antecedents even in prehistory, but its real ancient history links it to cartographic and anatomic representations. Its prehistory started in the late 18th century, with the work of Scottish economist William Playfair (1759–1823), who represented timeline economic data with diagrams, a form popular even today. Playfair was followed by legendary infographic designers, but the real age of infographics started with the first subway maps, depictions of military actions in the two world wars, and the first background illustrations of weather reports. It is no accident that it only started to grow at an incredible rate after the millennium, although Time Magazine graphic director Nigel Holmes made infographics part of mass culture from the second half of the 70s.

The data explosion, the birth of the world of open and connected data, the accessibility of animation tools, and the option of interactivity open up almost limitless prospects to infographics. This is aided by the universalisation of solutions that is made possible by the simplicity and uniformity of the language of graphics: pictograms may be understood in any language, and graphics can be dressed up conventionally.

The spreading and attaining of infographical knowledge are today aided by thousands of specialised sites, and libraries' worth of books on the sub-questions of the field. Along with these, the field's greater and greater acceptance in contemporary information culture is signified by competitions and prestigious acknowledgements.

EVALUATION AND RECOMMENDATION: This well-put phrase aids the further advancement of a field with increasing importance and awareness. The next step of spreading will probably be when members of the rising generations encounter the strength and techniques of infographics in a school environment, as part of their basic information education (visual literacy).

References:

- Playfair, W. (1786): *The Commercial and Political Atlas*. London.
Tufte, E. (1983): *The Visual Display of Quantitative Information*. Cheshire.
Cairo, A. (2005): *Sailing to the Future: Infographics in the Internet Era*.
McCandless D. (2010): *Az információ gyönyörű. Infografika*. Typotex, Budapest.

Info-guilt

~ the unpleasant feeling we feel when we know about a source of information we would need to know in the given situation, yet we cannot access it. Until we gain access to it, the bad feeling remains.

Expressions used with the same, or very similar, meaning: information anxiety

Expressions from related concepts: information psychology

Which category? An everyday expression to identify and cover a characteristic of information behaviour.

The phrase in the language system is peripheral, it only comes up occasionally.

James O'Donnell, in his book describing the changes and challenges resulting from the carriers of science and knowledge moving to the Internet, attempts to draw up the mental world of philologists. In his view, if they are conscientious enough, they feel info-guilty if they do not feel that the information base for their reasoning is reassuring (O'Donnell, 1998).

The danger of info-guilt started to loom around more and more people as more and more potentially available knowledge carriers were put on the Internet, and they are accessible using more and more professional search techniques. Today, anyone may feel guilty recognising that they have more, better, more definitive information available regarding a certain subject than they had when they made a statement regarding the subject. The newer definitions of the concept are using it in this expanded sense.

EVALUATION AND RECOMMENDATION: Even though many know this phenomenon, we cannot expect info-guilt to become a widely used expression. Partially, because the feeling of guilt is, in this phrase, highly tautological, as the exact definition would be “guilt that arose in an information environment”, signifying that the important moment is information, and behaviour that does not fit the existing external/internal norms.

References:

O'Donnell, J. (1998): *Avatars of the Word. From papyrus to the Cyberspace*. Harvard University Press.

Definition of Urban Dictionary: <http://hu.urbandictionary.com/define.php?term=info-guilt> [2015-03-29]

Infoholic

~ a person who develops a dependency on acquiring new information, news, and actualities.

Expressions used with the same, or very similar, meaning: information junkie, information addiction

Antonym(s): information avoidance

Expressions from related concepts: information hoarding, information omnivore

Which category? A successfully created word to express an everyday behaviour. **The phrase in the language system** is present with its short version all over the world that obfuscates the original meaning.

The word ‘workaholic’ first appeared in a Canadian newspaper in 1947 as a portmanteau of ‘work’ and ‘alcoholic’, as an original expression to describe working obsessively.

The core of this quickly popularised word does not refer to hard, passionate work, even in overtime, but to the pathological necessity of work, and that the lack of working may lead to withdrawal symptoms. Regardless, positive contexts started to emerge, and more and more, it became considered a virtue for employees. This duality was then also attached to the phrase ‘infoholic’, first used in 1986 (Steinmetz, 2010), that may be considered another portmanteau (information + workaholic). Its first occurrence has not yet been identified, but we know for a fact that it had first appeared in slang, and that it started to spread explosively as a name for people for whom acquiring new information was a hard-to-control habit or addiction. Victims of information alcoholism cannot resist the urge to access news and data by performing more and more searches. The concept has liberated itself from the workplace environment and work as (especially as gaining information over the Internet has become massively public), this overdriven, addiction-like, exaggerated information-gathering activity is not only characteristic of information workers any more.

EVALUATION AND RECOMMENDATION: It is important to see where we have to look for the exact meaning related to the two closest synonyms, information junkie and information addict. Information junkie usually appears in funny and/or ironic texts, usually on blogs and in less formal contexts, generally used by members of the younger generations. At the same time, information addiction is used as a serious, medical-clinical technical term, to refer to a mental illness identified by psychologists. Infoholic is somewhere between the two: it refers to

an imbalance and a compulsion, but in a not-too-serious, controllable, treatable form that one may still overcome in a socially acceptable framework. Used in this sense, the phrase may be meaningful.

References:

Steinmetz, S. (2010): *There's a Word for It: The Explosion of the American Language Since 1900*, Harmony Books, New York, 178.

Infoladies

~ a group of Bangladeshi women who took the bases of information infrastructure to the girls and women of the most underdeveloped regions of the country by bicycle.

Expressions used with the same, or very similar, meaning: Internet activists

Expressions from related concepts: information consciousness, information poverty

Which category? A unique fancy name, on the way to becoming a common noun.

The phrase in the language system has gained more prominence through the international flow of news than would be justifiable by its local nature. The primary reason for this is the large amount of interest surrounding the best practices of ICT4D, Information and Communication Technology for Development.

Computers and the Internet and virtually unknown to geographically disadvantaged (and more) inhabitants of hard-to-access villages and small towns in poor and overpopulated countries. In extraordinarily struggling Bangladesh, an NGO, D.Net intended to promote and educate about information technology primarily by women to people living in less developed areas – especially women, who, because of the gender discrimination in the Islamic world, are in a considerable disadvantage compared to men.

D.Net (<http://dnet.org.bd/>) created this bicycle corps of information culture and access. The Infoladies pedalled to get computers, Internet access, printers, cameras, and other modern tools to innumerable villages in the country, handed them to local women, and offered them three days of free use. After the three months, the women have to decide if they wish to keep on using the devices for a small fee. The Infoladies did more than carry these devices: they educated the locals in operating modern technical devices, and introduced them, for example, to the world of on-line government applications. They also offer useful medical and other advice, demonstrating the use of the Web as a resource.

Due to the initiative, the women learn more than the just the bases of information literacy. They got a chance to improve their quality of life, social standing, to learn, and to broaden their horizons. There still is a long road to true emancipation, but thanks to the Infoladies, there are less obstacles to fight on it.

EVALUATION AND RECOMMENDATION: If, following their example, female activists would get in the saddle to promote information culture, the concept may start on the path of becoming a common noun, by becoming a class of phenomena

that needs a name from an unique being. Maybe the charming strangeness in the expression will draw the attention of social innovation actors in other countries in difficult situations to the movement behind it and the possibility of implementing the established practice.

References:

- Bouissou, J. (2013): 'Info ladies' go biking to bring remote Bangladeshi villages online. The Guardian.
<http://www.theguardian.com/global-development/2013/jul/30/bangladesh-bikes-skype-info-ladies> [2016-05-03]

Infomania

~ a compulsion to immediately check incoming messages and on-line events on smartphones or computers.

Expressions used with the same, or very similar, meaning: information addiction, information junkie, infoholic, infornography

Antonym(s): infophobia

Expressions from related concepts: information overload

Which category? A descriptive term that did not make it to becoming a technical term, but its meaning (like the complexity of the phenomenon behind it) is progressively broadening.

The phrase in the language system is not popular, it is primarily used in professional texts.

Information researcher Elizabeth M. Ferrarini dedicated two books to the phenomenon she named ‘infomania’. In the medium-sized and major corporations of the age, electronic information systems were often not planned well enough, and, for example, alleviating operation difficulties engaged a lot of needless work hours. Employees forgetting themselves in the novelty often had a hard time balancing how often and why to use the new information resources during their work. Instead of finding a simple solution, or making the decision, turning to the computer and instead of performing their work, finding newer pieces of information is an attractive choice. Infomania, thus defined, results in lower efficiency, attention deficit, and deconcentration.

Then, with company environments becoming completely wired, on-line ecosystems, new forms of infomania appeared. Primarily, reading external and internal e-mails started to be dangerous, as workers, fearing to miss some important message, started to check their inbox to the detriment of their other activities (running into a mass of letters that are irrelevant for their work or even hold them back). In the last years, infomania became such an issue in work organisation and efficiency that dozens of pieces of research have been performed in order to get a comprehensive picture of it. For example, according to a 2005 study on 1000 Hewlett-Packard employees, infomania increases the level of stress considerably, and slightly damages mental abilities, primarily concentration.

With the generalisation of mobile devices, another layer of meaning was added to infomania. Today, this constant, ceaseless compulsion to follow news, e-mails, and social sites immediately is characteristic of young adults as well as computer workers. Regardless of what they are doing at the time – working, studying, leisure activity – the thought of controlling these information sources always lurks

beneath the surface, and forces people, time and again, to check them, allowing for a brief moment of respite.

EVALUATION AND RECOMMENDATION: Infomania has not even made it to term status in company information management literature, and the meaning is even less certain when discussing tool use habits of the generation called digital natives. The phenomenon it refers to exists and needs a descriptive term. Infomania seems to fit this description, yet its feeling pushes it towards ‘pathology’, while it is a mostly easy-to-handle dysfunction that people can grow out of. We would not be surprised if people attempted to cover its meaning with new, ingenious, and easily popularised terms both in corporate environments and youth subculture.

References:

- Ferrarini, E. M. (1984): *The Confessions of an Infomaniac* Sybex.
Ferrarini, E. M. (1985): *Infomania: The Guide to Essential Electronic Services*. Houghton Muffin.
Zeldes, N. (2007): *Infomania: Why we can’t afford to ignore it any longer*. First Monday 12 (8).
<http://pear.accc.uic.edu/ojs/index.php/fm/article/view/1973/1848#author> [2015-10-02]

Infomediary

~ producer or reseller of information goods, a 'third party' that allows for making economic decisions and planning next steps with valuable extra information.

Expressions used with the same, or very similar, meaning: information broker

Expressions from related concepts: information goods, information production, information trade, information worker, information proficiency, information value chain

Which category? A professional term that came to be at the intersection of electronic economy and information economy, it has not yet reached the level where it becomes a strong economic theory term.

The phrase in the language system is popular in English-speaking areas, otherwise its use is rare, and synonyms are preferred.

In everyday speech, we use information transfer to refer to pieces of news and information getting from one person to the other. In e-commerce, however, a very specialised meaning is built upon this, under which we may recognise the original meaning, but we use it exactly because of this special, extra meaning.

In product flow, the mission of intermediaries is to support the longer or shorter route from producer to consumer with the added value that they represent. Wholesale dealers are typical actors of this value chain, they serve as intermediaries between producers and retailers who are in contact with the consumer.

In the world of the Internet and electronic trade, intermediation, as a role, is under a double pressure. On the one hand, the network toolkit makes it possible to eliminate various actors from the value chain by creating a direct link between producer and consumer, or wholesaler and consumer (the slightly horrid, yet hard-to-replace term for this is 'disintermediation'), yet the new sale channels immediately create their own, specialised intermediaries; for example, companies offering payment services for small on-line payments (this is 'reintermediatisation').

The other remarkable development in electronic economy and trade is the birth of the dramatic upsurge of the range of information goods and products.

These goods may develop a value chain just the same, and thus the term 'infomediary' was created as a portmanteau of 'information intermediaries'.

Infomediaries in this sense existed before the digital world.

Some gave information value on the road to consumers by collecting and indexing news from various sources. The most sensitive and most sought-after type of information has, from the beginning, been price information that defines the behaviour and decisions of producers and their intermediaries, merchants;

numerous intermediaries have built their work around this. But those who prepare or transmit research results, market analyses, competitor monitoring reports to customers are also infomediaries.

In the world of the Internet, price information stayed relevant, but today, information regarding consumers – their behaviour, habits, values, choice structures, and personal preferences – are even more basic. All this was recognized back in 1997 by McKinsey consultant John Hagel and Harvard Business School professor Jeffrey Rayport, and with their article in the respectable periodical of the latter institution, they ‘jump-started’ the comprehensive professional dialogue regarding infomediaries, and the business models behind it.

Most infomediaries (may they be persons, websites, or artificial intelligences building databases) build upon value in personal data. It mainly provides a way for providers to make more money, or to increase their profits using the acquired information profiles. However, as personal details are also owned by their owner, there are solutions that create value specifically for them – by personalisation and unique information environments.

The first conscious infomediary was the on-line advertising firm AllAdvanced, founded in 1999. Although this company has since ceased to exist, numerous marketing- and advertisement-oriented successors have come to be after the millennium. Sites with lots of visitors became, almost automatically, infomediaries, as their own customer data is valuable for other market actors.

EVALUATION AND RECOMMENDATION: Infomediary is an oft-used expression of e-commerce. Its everyday meaning has not diffused because its meaning may be described and understood without using the expression that is somewhat clunky in its translations. Thus the points emphasized are the ones that are the most meaningful to users: the use of their personal data by third parties, the dangers thereof, the risks associated with observability, and the options of information self-determination.

References:

- Hagel, J. III. – Rayport, J. (1997): The Coming Battle for Customer Information. Harvard Business Review 1.
<https://hbr.org/1997/01/the-coming-battle-for-customer-information/ar/1> [2016-04-13]
Butler, M. (2000): Dawn of the infomediaries. Computer Weekly, July.
<http://www.computerweekly.com/feature/Dawn-of-the-infomediaries> [2016-04-20]

Infomercial

~ a commercial (primarily: television) commercial that introduces the product or service in a manipulative way, with the appearance of neutral, objective information transfer.

Expressions used with the same, or very similar, meaning: fake commercial

Expressions from related concepts: infoganda

Which category? A technical term in mass communication and marketing.

The phrase in the language system was primarily popularised as a media term that refers to a specific class of televised content, but it is hardly known and used by its targets, only those who analyse it.

Infomercial is a portmanteau word from information and commercial, created in the early 1980s in the United States, then it diffused worldwide from there.

Its essence is the demonstration of a product or service in a detailed, informative way that seems like informing, but the real goal is to sell to the audience. In other words: a commercial that does not seem like a commercial. Its equivalent in the press is the advertorial or PR article, i.e. a commercial masquerading as an editorial, this is also a portmanteau word.

Although the dramaturgy may differ, infomercials all use the same permanent or repeated elements, best known to us from TV shops. Average-looking extras as “everymen”, everyday jobs, situations, and names, meaningless, pointless statistical data, and pre-written and often repeated interviews with easy-to understand (occasionally stupid) texts are often present in them. During the biased and one-sided etudes, the purchase phone number or Internet address is typically displayed on screen constantly.

In the United States, it has been a subject to debates from its introduction to today, it has virtually no attributes that have not been attacked. Some believe them to be too influential, others critique their length. Numerous actors are specialised in making fun of the phenomenon, caricaturing it is a popular genre and a constant source of humour.

Because of the problematic nature of infomercials, multiple countries attempt to regulate them with strict rules, mostly regulating when and when not they can be broadcast, and how long they may be.

Infoganda (propaganda masquerading as information) matches infomercials in numerous elements, as it uses the same devices, but the product it sells is a view or standpoint regarding a sensitive issue that a political actor (political party, government achievement) or social group considers important.

EVALUATION AND RECOMMENDATION: The concept that is common in the literature of television and marketing and their professional discourse is known in most countries, and it is discussed by reference books.

References:

Hope, W. – Rosser, J. (2004): What is an Infomercial? Advertising & Society Review 5 (2).

Nathanson, J. (2013): The Economics of Infomercials. Priceonomics. November 15.

<http://priceonomics.com/the-economics-of-infomercials/> [2016-04-23]

Info-phobia

~ an unhealthy fear of too much and too new information.

Expressions used with the same, or very similar, meaning: information anxiety, information stress, information overload

Antonym(s): info-mania, information hoarding, information hunger, information omnivore

Expressions from related concepts: information pathologies, information lud-ditism

Which category? A failed attempt to create a professional-public term.

The phrase in the language system is on the verge of extinction.

Info-phobia is one of the failed conceptual innovation attempts. Matthew Lesko used the phrase twenty years ago as the title of a forgettable, low-quality, but still, unbelievably often cited book (Lesko, 1996). He attempted to create fear about how we may, when faced with innumerable pieces of information, be unable to find the appropriate ones, or may even arrive at bad decisions based on bad information by simply listing ideas from the panic literature of information overload.

The feeling behind all this is, naturally, much more generalised and well diffused than the expression itself. László Drótos (1993) finds the components to be the feeling of being left behind (it is impossible to follow the expansion of the information universe), the growth of information mess (the needless, worthless mass that important, useful, and timeless elements have to be mined from is getting bigger and bigger), and the necessity of adaptation (new pieces of information and the related new devices force people to constantly re-create themselves and their ideas on the world).

The uselessness of the concept of infophobia may be traced back to two reasons: the expression is badly chosen, as it is not a new type of medical-clinical phobias, therefore the association is misleading, and the emperor stays naked: its creator only wanted to get attention by inventing a bombastic word-monster. On the other hand, it must be realised that reflecting on a situation that gives rise to anxiety, the concept tried to grasp something valid before or during the change in information culture. After this change had occurred, and the information ecosystem was no longer an unfriendly, adverse environment for digital natives, but a natural, familiar, well-known medium, there were no more reasons left for keeping the phrase 'infophobia' alive (unless we intend to use it for authors whose constant rearguard actions stubbornly approach a complex information culture only from the direction of its downsides and dangers).

EVALUATION AND RECOMMENDATION: Creating this concept would be considered failed even if we temporarily accepted the validity of the explanation of reality that gives it its meaning – as the chosen solution does not even support this appropriately.

References:

- Lesko, M. (1996): Info-fobia: How to survive in an information society. Information USA Inc.,Kensington.
- Drótos L. (1993): Informatikai Jegyzetek. <http://www.bibl.u-szeged.hu/~drotos/informatikai-jegyzetek/> [2015-01-06]

Info-poor, information poverty

~ a new type of poverty that came about because of the increase of information inequalities, that, if present, reproduces all processes that lead to poverty or that sustain it in a more severe form.

Expressions used with the same, or very similar, meaning: digital poverty

Antonym(s): information richness, info-rich

Expressions from related concepts: information inequality, information capitalism, information and knowledge richness, digital inclusion and exclusion

Which category? Its professional-public use is slowly replaced by an use working with strong variables and statistical backgrounds, built on a stricter social science definition.

The phrase in the language system is rooted, but it did not become a widely used expression.

Welfare states were capable of decreasing social inequalities for a while after World War II, but those started to increase again in the societies of developed countries and among the developed and undeveloped regions of the world.

Explanation of the process is complex, many variables must be used, but certainly, information capitalism, the nature of the information and knowledge economy, and information inequalities play an important role in the increase of selection and polarisation pressures.

The sectors, groups, and people who cannot match the new rules of the game get switched off and marginalised. Entire regions are excluded from the world economy as they cannot match the requirements of transition into information economy and become uncompetitive. Manuel Castells calls them the “black holes” of information capitalism: they are neither producers, nor consumers in the global networked market economy.

The same effect is realised inside the beneficiary countries. British and American researchers (Wilson, 1987, Haywood, 1995) had described the phenomenon even before the Internet revolution, the first occurrence of the word is from 1970. Shortly afterwards, they had to notice (Kagan, 1999), that the gap started to grow further, and concentrated strategic, political, social, and economic development measures had to be made as reactions to bridge these.

The appearance of cheap end devices and the slow building up of the network infrastructure may give successful development programmes a chance, but in the meanwhile, the information gap grew into a knowledge gap, and bridging it means an even bigger challenge.

EVALUATION AND RECOMMENDATION: Information poverty is an expressive and usable concept. It is understandable without an explanation by people who had not known it before.

References:

- Wilson, A. (1987): The information rich and the information poor. Aslib Proceedings 1, 1–6.
- Haywood, T. (1995): Info-Rich – Info-Poor: Access and Exchange in the Global Information Society. London, Bowker Saul.
- Kagan, A. (1999): The Growing Gap between the Information Rich and the Information Poor, Both within Countries and between Countries. A Composite Policy Paper (IFLA)
<http://eric.ed.gov/?id=ED441452>

Informatics

~ the science of computer information systems. In the narrow sense, it includes the entire technological and scientific background systems, and in a wider sense, it also includes the issues of the structure, algorithms, behaviour and interrelationships of natural and artificial information processing systems.

Expressions used with the same, or very similar, meaning: information technology (IT), infocommunication technology

Expressions from related concepts: computer technology, computer science, information theory

Which category? An engineering-natural science term with a clearly identified meaning regardless the uncertainties of interpretation.

The phrase in the language system is very commonplace, including its attributed and formed versions.

Computer development and the development of the relevant, necessary mathematical-engineering knowledge was, for a long time, solely about computational power and its prerequisite automatisation, but after a while, they were about more and more machine (microelectronic innovation, storage, interfaces, displays) and software (operation and high-level operations) moments. And when the first computer applications started in the late 50s (for payroll, banking, and airlines), it became clear that machine-managed data represent information related to the real world, and thus computers will not only and not primarily represent the worlds of numbers and computation and thus revolutionise it, but that of information. This realisation resulted in numerous suggestions for an expression with a meaning wider than computing and computer sciences – in Europe. German computer scientist Karl Steinbuch recommended the form of Informatik in 1957, and independently of him, in France Philippe Dreyfus recommended using informatique. English ‘informatics’ is a later development, and there (because of the popularity of ‘information technology’), it is generally used to refer to the old meaning of computer science – the one meant to be transcended (and to be separated from the practical-engineering side, computer sciences). The expert in the field is called the computer scientist.

With the way informatics entered almost all aspects of society, economy, and culture, the special informatics problems of various user worlds came about, and specialised informatics were developed to deal with them (from agricultural informatics to music informatics). Furthermore, informatics experts had wanted to call even studies on the social effects of informatics ‘informatic’, but social scientists

could not let this happen: thus, by the early 90s, social informatics was born as the hybrid of sociology, anthropology, communication science, psychology, and a number of their fields.

In this time, innumerable conceptional experiments were made to add the human side to the machine (socio-informatics, human informatics), but these were deemed to fail, as HCI (Human-Computer Interaction) had earlier been born and diffused for this use.

EVALUATION AND RECOMMENDATION: Informatics, at the time of its birth, attempted to reflect on existing differences, and despite all its controversies and parallel uses, its meaning is clear. The concept has, for a long time, been serving the researchers, engineers, and practical experts of the machine side of the information ecosystem well.

References:

- Steinbuch, K. (1957): Informatik: Automatische Informationsverarbeitung. Berlin: SEG-Nachrichten.
- Dreyfus, P. (1962): L'informatique. Gestion, Paris, 240–41
- Kumon, S. (2008): An Infosocionist's View. Journal of Socio-Informatics 1 (1), 6.

Information(al) realism

~ a structural-analysis method that traces back the basic nature of reality of structures created by information.

Expressions used with the same, or very similar, meaning: information ontology, information turn

Expressions from related concepts: information philosophy

Which category? Technical term.

The phrase in the language system has not diffused, it is not well known, and the theory behind it is not often cited outside its own academic publication interfaces.

Philosophical questions regarding the basic nature of existence were fertilised by the information-centred view of contemporary culture in multiple ways (cf. paninformationalism). However, according to Italian researcher Luciano Floridi, “digital ontologies” that build up the material world from bits cannot answer every question that relates to physical reality. However, he believes that the term ‘information realism’ that he started to popularise after the millennium may be capable of solving this deficiency. He describes reality as the totality formed by information objects in a constant, dynamic communication relationship to each other, where information is the structuring element, while computation is element resulting in change.

Information realism is the approach, while information ontology is the philosophical area studied with this approach.

EVALUATION AND RECOMMENDATION: Floridi is often quoted and information realism is often referred to in studies. However, information realism itself is rarely the subject of dialogue, it has no discourse of its own. The main reason for this is that the universal use of the information concept is very problematic, and thus a long time is still needed to accept or dismiss the theory built upon it.

References:

Floridi, L. (2004): Informational realism.

<http://crpit.com/confpapers/CRPITV37Floridi.pdf> [2015-09-16]

Informational self-determination

~ individuals' right to make decisions regarding information on them freely. In multiple countries, privacy laws regulate their realisation.

Expressions used with the same, or very similar, meaning: protection of personal data, privacy, information privacy

Antonym(s): information vulnerability

Expressions from related concepts: information rights, personal autonomy

Which category? An information rights-related legal term with a solidified meaning.

The phrase in the language system is naturalised, its rarely used everyday meaning is identical to the professional-scientific one.

In the life of a person, who can access information on them and their personal data, and what they are used for, and if the individual can oversee the fate of these data and if they can influence it. One of the causes is the development and generalisation of infocommunications technologies.

In the development of law, free persons' right of ownership over their bodies was expanded to include information related to one's self: the Habeas Corpus (literally: your body is yours) law from 17th century England ensured that no one could be imprisoned without a judge's sentence; in its expanded view, it is the right of one's self-determination. The Habeas Data (your data are yours) concept of current Latin American constitutions accordingly are the guarantee of one's right to their own data, and in the expanded sense, virtual self.

Recognising this process, from the 1970s, Western democratic states guaranteed the information privacy of their citizens with legal methods; after the German original, the name of these laws are the slightly ambiguous Data Protection (Datenschutz) laws. Enforcing this right first against the state, then against private organisations, and even later, against other private citizens using ICT tools became important for citizens.

The concept of information self-determination was first described by the German Federal Constitutional Court in its famous 1983 ruling on the Census Act, according to which, if citizens cannot know which pieces of information their communication partners possess about them, their freedom of action is impeded. This reasoning matches the role of personal autonomy and human dignity, the bases of German constitutional values.

Various countries do not declare information self-determination, but offer their citizens protection in handling their personal data. Both traditional data protection rights and information self-determination rights have their limits, but these

are exceptions of fundamental rights, and therefore are only applicable in a narrow circle, in the presence of certain conditions.

The new ICT environment makes one's self-determination of one's own data more difficult – people are often not even asked about the use of their data, or they have no other option when using a network service, and even if they voluntarily offer their data to the providers in return for some benefits, they cannot see through the fate of their data, have little say in their use, and deleting them is almost impossible at Internet providers – and this is exactly the situation that the network business models are built around.

There are two directions of handling this problem: a regulatory and a technological direction. On the regulatory level, the comprehensive EU data protection reform of Spring 2016 will enforce stricter rules, to be used directly in each Member State, which will increase the possibilities of information self-determination, for example, with the right to be forgotten, and allocate more duties and stricter sanctions to data handlers. On the technological level, alongside Privacy Enhancing Technologies (PET) that have existed for decades, Privacy by Design – built into ICT systems – and Privacy by Default – using privacy-friendly default settings in devices and applications – became design guidelines.

Providers and other organisations interested in the business and other use of personal data often refer to people not being interested in information self-determination to explain away their practices. However, empirical studies demonstrate something else: people are very much interested in the fate of their data, even if they have little practical control over them, and bargaining models that represent zero sum games (e.g. the security vs. privacy dilemma) are, according to studies, built on discredited expectations (Friedwald et al., 2015).

EVALUATION AND RECOMMENDATION: Information self-determination rights and options should become part of the basic knowledge, needs, and skills of information society citizens, therefore its further promotion is necessary. We must emphasize, as an important viewpoint, that instead of privacy, that is well diffused in the world, that represents the view of law that protects the citizen, the English version of the German term that also represents the idea of advocacy in the expression ('self-determination'), and this viewpoint is also decisive in the educational-informative work.

References:

- Friedewald, M. et al. (2015): Privacy and Security Perceptions of European Citizens: A Test of the Trade-off Model. In: Camenisch, J. et al. (eds.): Privacy and Identity Management for the Future Internet in the Age of Globalisation, Springer, Heidelberg, Berlin, 39–53.

Informavore, infovore

~ a person hungry for information as a biological urge, who experiences happiness in alleviating the symptoms of information deficiency.

Expressions used with the same, or very similar, meaning: infoholism, information foraging, infophage

Antonym(s): information avoidance

Expressions from related concepts: information behaviour, information search

Which category? An experimental technical term still waiting for well diffused acceptance.

The phrase in the language system not completely embedded yet.

The word ‘informavore’ is a portmanteau of information and carnivore. It was created by one of the giants of cognitive psychology, George A. Miller, who first used the term in his 1983 study „Informavores”. Miller compares the relationship of person and information in information societies to the relationship of animals and their food. ‘Higher level organisms’ consume and digest information, just as animals do with their prey.

The term, shortened to infovore, became well known and popular following a new research result in 2006. Unlike Miller, two American neurologists, Irving Biederman and Edward Vessel concentrated not on the human psyche, but uncovered the neurobiological natural history of information consumption. They demonstrated that infovores feel desire and joy during reception. They proved that during information receipt, the neurons in the brain’s gratification centre are active. In the moment of understanding a piece of information, we may experience a feeling similar to the joy experienced when using opiates; as the endorphin molecules released at the moment of understanding stimulate receptors in the brain, and we identify this feeling as happiness.

EVALUATION AND RECOMMENDATION: With information foraging, researcher were trying to find an analogy to understand the strategic space that defines information behaviour. Informavore is very similar to this, yet it is used to express something very different. Word-for-word translations, however, sound worse in multiple languages than the English original – maybe eating is not the best idea to associate the phenomenon to. The fate of the expression depends partially on whether the literature chain based on Biederman et al.’s research gets longer, and whether a more creative and more elegant phrase will come up for the same

function, turning it away from information foraging. One thing for sure is that ‘infophage’, which urban slang is experimenting with, will not be it.

References:

- Miller, G. A. (1983): Informavores. In: Machlup, F. – Mansfield, U.: The Study of Information. Interdisciplinary Messages. New York, 111–113.
- Biederman, I. – Vessel, A. E. (2006): Perceptual Pleasure and the Brain: A novel theory explains why the brain craves information and seeks it through the senses. *American Scientist* (5–6), 249.
- http://www.cns.nyu.edu/~vessel/pubs/Biederman_Vessel_AmSci06.pdf [2015-09-24]

Informetrics

~ a field of information science that combines information research, data and text mining, and the quantity-based analysis of information flow.

Expressions used with the same, or very similar, meaning: information statistics, information measurement

Expressions from related concepts: information flow, information use, information value

Which category? A technical term that names a new generation scientific field.

The phrase in the language system is stably rooted, but is yet unknown outside the narrow range of its experts.

Bibliometrics, and later scientometrics, these two reputable fields have developed and continuously improved methods for measuring every measurable aspect of book and periodical publication. In 1979, Otto Nacke from Germany recognized that while the content of books and scientific publications are different, their nature is not. They both have a scope, metadata, similar measurements may be performed with them, and this is also true to other carriers, information objects (e.g. the giant medical and legal data stores). Thus he recommended the creation and naming of a new, comprehensive field of science – informetrics, created based on the predecessors (Nacke, 1979).

Nacke realised that behind the changing content, functions, ways of use, and forms, there are shared rules, and informetrics integrated first patentometrics, then the new world of network culture, melting the quantitative measurement of the internet, the World Wide Web (Webometrics) almost unnoticed. With the appearance of the various on-line content genres, blogometrics and news informetrics became their own units of measurement, and then this all dissolved in cybermetrics that includes all the elements of the electronic universe outside the Web.

The field has its journal (Journal of Informetrics, JOI), conferences, and research institutions, the most famous of which is the Centre for Informetric Studies (CIS) at the Royal School of Library and Information Science, Copenhagen. Informetric expertise and skills in quantitative analysis are becoming more and more valuable in libraries and in information provision institutions.

EVALUATION AND RECOMMENDATION: The expression became accepted and clear relatively quickly. Possibly, it will become better known with the generalisation of new levels of information literacy – not only the existence or role of informetrics, but also a number of its typical solutions and interfaces.

References:

Nacke, O. (1979): Informetrie: eine neuer Name für eine neue Disziplin. *Nachrichten für Dokumentation* 30 (6), 219–226.

Stock, W. G. – Weber, S. (2006): Facets of Informetrics. *Information* 8, 385–389.

Informology (informatology, informationlogy)

~ the extension of information science to every information phenomenon and terrain that was previously excluded.

Expressions used with the same, or very similar, meaning: information metatheory

Expressions from related concepts: information science, information philosophy, the universal theory of information, the unified theory of information

Which category? An experiment to change the nomenclature of the sciences of information with a new science name.

The phrase in the language system lives in the professional communities of conceptual innovators, it is diffusion and referenced by its students.

A terminology Cold War has been going on about the name of the science(s) of information ever since, in the 40s of the last century, the science that would later be called information theory turned the meaning of information, previously used by library and documentary science in its everyday meaning, into an abstract, mathematically described, quantitative entity from the direction of probability theory and the physical concept of entropy. The birth of the words information theory – information science could theoretically have alleviated this issue, but information science, as a programme, intended to keep on working on solely the systems of automatized signal processing, while information became a subject to scientific discourse in biological, genetics, and physical-cosmological sense. Attempts have been made to fill the space with various names, primarily by adding adjectives to information science (general, unified, universal, etc.). There also was another approach to the problem: that it can be handled without conceptual innovation, one only has to find the metatheory of information.

However, many scientists did not accept this, and they hoped to drain the conceptual swamp by creating newer and newer variations on words. In the sixties, Russian scientists initiated the use of the word informationlogy. In the early seventies, Otten and Debbons suggested using it as informatology (1970); another two decades later, an Iranian and a Russian scientist recommended, in parallel, contracting it to an even shorter form, informology, as the final terminology solution.

Typically, the approaches of the two proud inventors, Horri and Mokij, are markedly different. The first attempted to sum up the frameworks, dimensions, and aspects of information from a structuralist point of view, the latter examined the relationship of information systems and the information environment, the

spatial arrangement of information, and the laws of spatial information systems from a dynamic system viewpoint.

EVALUATION AND RECOMMENDATION: Surprisingly, more and more scientists seem to accept informology as the alternative of information science in the traditional sense, including mathematicians, computer scientists, and library scientists. We believe that a new name solves nothing, it only deepens the rift in terminology. The scientists of information must solve basic tasks of interpretation and classification that certainly cannot come from the direction of linguistic innovation. Therefore we believe the use of any alternative conceptual innovation to be contraindicated.

References:

- Otten, K. – Debons, A. (1970): Towards a metascience of information: Informatology. *Journal of the American Society for Information Science* 1, 89–94.
- Horri, A. (1993): Informology. *Faslname-ye Ketab* 3, 393–395.
- Mokij, V. S. (1994): Problems of economic informology. *International Scientific-Practical Conference*. Moskva.

Infornography

~ a portmanteau word that, in a narrow sense, means a desire to sate one's information hunger much like the desire to consume pornographic content, in a wider sense, the abusive deforming of a naturally functioning information environment (like how pornography distorts healthy sexuality).

Expressions used with the same, or very similar, meaning: infomania, info-holic, information junkie

Expressions from related concepts: information addiction

Which category? A failed conceptual innovation that, by itself, does not aid with accurate expression neither in professional forums, nor in the fields of public discourse, and virtually only exists along with its explanation, but because of its bizarre atmosphere, used by many.

The phrase in the language system is stably present, it did not fade in two decades, and its new meaning is promising, this will likely be the key to its longevity.

According to our current knowledge, the term 'infornography' was first used in 1998, as the title of episode 11 of cartoon series Serial Experiments Lain.

The word came about as a portmanteau of information and pornography, as it tries to express that the desire for information often resembles the desire for pornography, a type of deviant sexual excitement. Getting to know information does not offer complete satisfaction, only a temporary one, after which the process starts again. Those who fell into this trap feel joy and suffering when they share, receive, exchange, or digitalise information. And this, just like with people with information addiction, may have an effect on their social lives. For example, meeting others on-line is much more obvious and easier to realise for them than personal encounters that they, whenever possible, attempt to avoid.

However, the phrase did not diffuse in Internet sociology (it is only found on blogs and forum threads), as numerous, very similar-feeling expressions had been created before for the same meaning, guiding our associative feelings to the various empires of 'passion' (infomaniac, information addict, information junkie). The reason for the spreading of the expression is that after a while a second, alternative meaning started to crystallise, imbuing the subject with greater depth. Websites that confuse readers instead of providing facts and clear information are infornographic. So are channels where others may be harassed with information. Where openness and trust may be exploited. Exactly how the deviant and extreme image of sexuality promoted by pornography transforms ideas regarding the world of natural, normal sensuality.

EVALUATION AND RECOMMENDATION: Today, this latter, secondary explanation is the one mostly used. And although it can aid deep discussions on the contents covered by the meaning, the concept is still not suitable for use without an explanation. That is because when it is used, the meaning may only be identified by people who already know it, the word itself does not aid in understanding the meaning.

References:

- Colman, F. (2003): The Sight of Your God Disturbs Me: Questioning the post-Christian bodies of Buffy, Lain, and George, Refractory. *Journal of Entertainment Media* 3 (1) 9.
https://minervaaccess.unimelb.edu.au/bitstream/handle/11343/34580/67180_00003027_01_Colman_007.pdf?sequence=1 [2015-09-28]

Infotainment

~ making information communication get closer to currently popular forms of entertainment using which, the desired content reaches the target audience easier than versions of the same message without an entertaining nature.

Expressions used with the same, or very similar, meaning: –

Expressions from related concepts: edutainment

Which category? A descriptive term that captures a well identifiable, though shape-changing mass communication phenomenon.

The phrase in the language system appears virtually exclusively in professional media tests, and even there, only sporadically.

Major slang dictionaries all name 1983 as the birth date of the portmanteau ‘infotainment’ (information + entertainment), when it was used in the magazine Phone Call. Its interpretation was built up as relevant to a TV context, regarding news programmes, in a critical sense. It was used to express the practice that, if a news item would not have reached the threshold by itself, an environment was created for it, it was dressed up in a way that made it closer to preferred entertainment genres, making it more visual and humorous, therefore information content can be transmitted via entertainment.

It was used in this sense for a long time, then some interesting developments occurred.

In the race of news programmes, quickness, reliability, and authenticity became more important than spectacle. Professional news factories ceased this practice almost entirely, but hybrid genres (especially public-political news shows such as Jon Stewart’s Daily Show and the Colbert Report) that explicitly mixed entertainment with the news that were made the raw material for it came about.

In the meanwhile, however, the hunger for news, information, and knowledge grew to such an extent that creators of purely entertaining content began to ‘improve’ their own content with extra information. Quiz shows mix entertainment with informative, educational content. Before (or even during, utilising multimedia possibilities) theatrical plays and concerts, addenda and pieces of knowledge that make access to artistic content easier are composed. Heroes of popular literary genres (crime fiction, young adult novels) started to convey, almost incidentally, serious bits of information: for example, factoids became popular gags in the TV series ‘The Big Bang Theory’. Content is hybridised in many ways on the Internet, too: in certain age groups, gamification is mixed with conveying information, in other contexts, marketing messages are replaced by real, valuable

pieces of information, and in the world of YouTube clips, many types of entertainment content are associated with many kinds of information, and many “serious” kinds of content can take on light, visual, entertaining guises.

All in all, we see that the once-important direction disappeared from between the two parts of the phrase, and now, they can hybridise in multiple ways.

EVALUATION AND RECOMMENDATION: Based on dictionaries that also measure occurrences, use of the term has peaked in 2005 in English speaking countries, and since that, it has decreased.

References:

- Nisbett, M. (2001): That’s Infotainment! The Committee for Sceptical Inquiry, April 30.
http://www.csicop.org/specialarticles/show/thats_infotainment [2016-05-10]
Upshaw, J. (1999): Infotainment. In: Encyclopedia of Television News. Oryx Press. 103–105.

Infotention

~ the entirety of psychological, social, and technological skills that help navigate the computer-dominated world by allowing us to better utilise our attention potential.

Expressions used with the same, or very similar, meaning: information awareness, information efficiency

Antonym(s): information blindness, information avoidance

Expressions from related concepts: information anxiety, information literacy, information diet, personal information management, information erudition, information taming

Which category? A personal language innovation with the intention of creating an information science term.

The phrase in the language system was, for a long time, only present in an insular way, but it has slowly started to diffuse recently, and it started to tear away from the original interpretation.

We encounter few concepts with such a clearly reconstructible history. One of the legendary figures of the internet, creator of the concept of virtual communities, a definitive theorist of mobile phone anthropology, the American Howard Rheingold announced on one of his blogs in August 2009 (Rheingold, 2009a) that he created a new expression by contraction.

As today any question asked anywhere may receive thousands of answers in a second, this must lead to a radical change in our behaviour that is unprecedented in human history. To be able to choose the relevant answer, keeping in mind that a large amount of information may be misleading, false, or may refer to something else entirely, Rheingold thinks that a new view, awareness, and consciousness is needed: information attention (information + attention = infotention). The connection of the ability of attention driven by the human mind, other people's intelligence, and the computer-controlled information capacity, as a higher level of digital literacy.

According to Rheingold, the combination of psychological, social, and technological abilities into a shared quality, the mind-machine combination works best if a third factor, social disposition is introduced, as simply relying on ourselves may not be enough to orienting ourselves. Contact with on-line communities aids the operation of the mechanisms of infotention. With friendships made in the on-line world, the information filtering process speeds up and becomes simplified as the various knowledge bases encounter each other. Accordingly, Rheingold specifically underlines the importance of metacognition (the maintenance of interest re-

garding the nature of cognition) in Internet and social media use. All this requires mindfulness, a series of successful micro-decisions, therefore Rheingold (2009b) uses it more and more as an attribute before the phrase ‘infotention’.

Rheingold (2012), who recently summed up his views in a book, was the only one to use and utilise the concept in his advisory practice, but after a while, the need for development over reception occurred. Since 2014, texts that interpret the concept independent of Rheingold – for example, Wilson’s (2015) interesting approach that argues for the usefulness of ‘chunking’ the information into smaller bits that are easier to process for the working memory, therefore aid with the concentration of infotention.

EVALUATION AND RECOMMENDATION: We consider infotention a doubly failed concept creation. First, it includes a strong and disturbing redundancy: attention is, by itself, part of information behaviour, both when we concentrate on a process in our vicinity and when we concentrate on a piece of information transmitted through a channel (e.g. another speaker or a TV programme). However, the subject of attention in these cases is not ‘information’, but information that relates to something, is about something, is like something. Attention itself works as a resource when it is the subject of a competition; this is what the phrase attention economy refers to. Thus there is no information attention, only attention. Also, the portmanteau resulted in a new word that is, by itself, meaningless; it coded meaning has to be explained in order for it to be understood. Thus we may consider it lucky that in most countries, it became neither known nor popular. We can only trust that Rheingold’s innovation will be rejected by the language.

References:

- Rheingold, H. (2009): Infotention. 21st Century Literacies Smart Mobs, August 20.
<http://www.smartmobs.com/2009/08/20/infotention/> [2015-11-26]
- Rheingold, H. (2009): Mindful Infotention: Dashboards, Radars, Filters. SFGate, September 1.
<http://blog.sfgate.com/rheingold/2009/09/01/mindful-infotention-dashboards-radars-filters/>
 [2015-11-26]
- Rheingold, H (2012): Net Smart: How to Thrive Online, The MTI Press.
- Wilson, J. (2015): Chunking: A Tool For Infotention (Prezentacio). September. 9.
<https://prezi.com/zcabp6kccami/chunking-a-tool-for-infotention/> [2015-11-26]

Infowank

~ narcissistically dousing recipients with information regardless of their lack of interest, causing severe discomfort in recipients as they realise: instead of sharing knowledge, this is a one-sided pleasure.

Expressions used with the same, or very similar, meaning: mental masturbation, computer-onanism

Antonym(s): information star, infogasm

Expressions from related concepts: information behaviour, information addiction, narcissism, information hoarding

Which category? Urban slang term.

The phrase in the language system is present in this form in English-speaking countries, in other places, other words related to masturbation are used to express the same meaning.

The word, a portmanteau of wank and information, was entered into the on-line slang dictionary Urban Dictionary in 2005. It also has a verb form (infowanking), and a version for naming the person (infowanker). As it is a form of spoken language used in small groups, it rarely enters written texts, therefore there are few Internet search results. Interestingly, outside English, there have been attempts to translate it to Russian, but none of these translations reflect the original meaning.

In the meanwhile, the phenomenon that this intense phrase refers to is very well known. Whether we encounter it often enough that a specific word is warranted is, of course, debatable, but as infowanking is mostly a danger to high school and university students, we cannot wonder if its use becomes more commonplace.

Also, it is very interesting to realise how creatively language can link a well known (and loaded with secondary associations, used in multiple ways) connotation metaphorically with another word, giving life to a new expression that can call up, identify, and name an important phenomenon.

EVALUATION AND RECOMMENDATION: As (almost) synonyms, we listed expressions that occurred in non-English texts. Despite its spreading, the fate of the phrase is uncertain.

References:

<http://hu.urbandictionary.com/define.php?term=infowank&defid=1185421> [2016-04-21]

Info-window (info-box)

~ a text appearing in a pop-up window, or a different-coloured rectangle-shaped area, that has a logical relationship to the website's content (it explains something or points out further options).

Expressions used with the same, or very similar, meaning: information dialogue, infobox

Expressions from related concepts: information architecture, information design

Which category? An established piece of website designer jargon, often occurring in their professional-educational materials.

The phrase in the language system is well diffused in the programmer subculture, although users generally prefer 'window'.

In network information architecture, displaying the supplementary-explanatory texts and/or pictograms that may, if needed, be attached to contents of the site (text, audio, pictures, tables) is an important element. One of the multiple options is a permanent or pop-up window, similar to the text boxes well known from comics. An interesting note is that these text bubbles are first found in 13th century Japanese animal tales, drawn on wooden panels, and this form crossed over to web design after numerous other early uses.

Programmers and their aides know of and recommend numerous tricks that allow the design of information bubbles with lots of functions, interaction opportunities and aesthetic choices.

EVALUATION AND RECOMMENDATION: Even in the medium term, we expect the second expression, 'info-box' to gain hold, but its shortened version, 'infox' may win at the end.

Reference:

Information Window (control description)

<http://bio3d.colorado.edu/imod/doc/3dmodHelp/infowin.html>

Information infrastructure

~ all the physical, technological, and mental resources manifesting in background systems and tools necessary for the operation of organisations or services that provide indispensable information for executing an activity, and provide the channels, platforms, and tools of their availability and processing.

Expressions used with the same, or very similar, meaning: information utility, information system, information superhighway

Antonym(s): physical infrastructure

Expressions from related concepts: knowledge infrastructure, information services

Which category? An expression born with the expansion of the (somewhat controversial) infrastructure concept, diffused as a term in economy theory, that was used in an ever wider sense since the 1990s, primarily as a synonym for telephone and Internet access. It only made it from its professional-public use to everyday use in this narrow sense.

The phrase in the language system is stably rooted, primarily because it is used 'officially' in various names (e.g.: the National Information Infrastructure Development Program, Hungary). It is often referred to as the 'infocommunications infrastructure', this makes acceptance and solidification more difficult.

Along the 'classic' infrastructure elements (network-natured travel-transportation or energy provision), information infrastructure has existed since the dawn of time, in the form of a news service or post office, but everything from clay tile archives providing the background of legal transactions to the medieval 'loca credibilia' to modern civil registers belonged here (for example, paper and stationery supplies in pre-printing press times).

From the last third of the 19th century, telegram and telephone networks (including undersea cables) were 'industrialised', later, base systems were built on wireless broadcasting (radio, television, mobile phones). In a narrow sense, even today, the physical infrastructure of access to information services is referred to as 'information infrastructure', in all of its guises traditional landlines, fibre optic wires, satellites, lasers, wireless transmission), generally in the context of ensuring maximum data throughput. However, this 'sub-structure' is inoperable for companies and institutions without the digital end user tools and the relevant software (or more 'gadgets', sensors, barcode readers, and other tools). For organisations that depend on incoming information, information content created as

services (newsletters, databases) are infrastructure-natured, and often, so are the specialists who fill the information jobs that require a high skill level.

Based on the covered area, the information infrastructure may be global (Global Information Infrastructure, GII), national (National Information Infrastructure, NII), regional (Regional Information Infrastructure, RII), metropolitan (Metropolitan Area Network, MAN), or company/institutional (that is not necessarily limited to the 'office building': multinational corporations may even have their own networks that cover the entire worlds).

Another exciting development is that because of the accelerating informatisation of the control and monitoring systems, today traditional, physical infrastructure elements (roads, sewers, energy distribution, storage, and transmission systems) are being informatised as well, therefore ensuring information flow becomes of key importance in every are. Meanwhile, by now, users' requirement towards the information infrastructure is for it to be available everywhere, and to surround us in the most noticeable way possible.

Recently, the concept of the 'critical information infrastructure' has diffused, as a name for the areas most endangered by and vulnerable to information warfare, that, if damaged, would cause the biggest issues.

EVALUATION AND RECOMMENDATION: Although the expression was born as a use of a controversial term of uncertain content, in the concerned communities, its use is clear, usually clarified by context. For 'digital natives' (the generation that masters information culture as children), all this means little, they are interested in the practical side (if there is Wi-Fi signal or wired access), they are not sensitive to the abstraction present in the concept. And as the 'great age' of information infrastructure building (the 'superhighway-era') is over, the expression is retreating in both everyday use and the language of the press.

References:

- Hanseth, O. – Moteiro, E. (1998): Understanding information infrastructure. Unpublished Book [2015-08-25]
- Leigh, S. – Ruhleder, K. (1996): Steps Toward an Ecology of Infrastructure: Design and Access for Large Information Spaces.
<http://staff.cs.utu.fi/kurssit/CIISR/2005/Star%26Ruhleder-1996.pdf> [2015-08-25]

Information island

1. ~ a case of isolation created as the result of a technological or organisational practice that makes access or transfer impossible.

Expressions used with the same, or very similar, meaning: information black hole, information trap, information quarantine

Antonym(s): information public good, information dissemination

Expressions from related concepts: information management, information flow

Which category? An information science term that is expanding to cover more and more fields of meaning.

The phrase in the language system is present with a decreasing intensity, as the situations of isolation are that give it its meaning are less and less present.

2. ~ an artificial object, physically separate from its environment, standing out from it, created with the explicit goal of information searching.

Expressions used with the same, or very similar, meaning: information counter, information kiosk, information station, information point

Expressions from related concepts: information service, informing, library

Which category? An everyday expression with a strong visual element.

The phrase in the language system is used more and more.

1. 'Information island' was first documented in the English language computer jargon in 1995, used to refer to electronic information (files) that could not be shared because of a lack of network connection. Later, satellites with which communications have broken down were also called by this name. Databases that cannot transmit data into another system without reverse engineering (especially without their original developer and programmer) as their software is old and obsolete can become information islands. Data sources may become impossible to integrate for other reasons, as well (for example because of the damaging or ageing of the reader or carrier). Various information sets that can only be accessed locally or that cannot be reached by searching form information islands; in these cases, technological 'bridges' must be built between them (Atherton, 2002). This is how the stocks of lots of separate information islands are made accessible by huge virtual collections (such as the Europeana Libraries).

In the literature of corporate information management, another interpretation appeared, that calls employees that stop the flow, hold information back,

and instead of sharing, isolating and hiding them at a point of the organisational hierarchy, who attempt to make their own standing stronger by monopolising information as part of internal rivalries or fearing for their jobs. Typically middle managers – this is why Stasztny (2008) can speak of the “middle manager information island”.

2. It was probably the image of the ‘traffic island’ that emerges from the street that inspired organisers of large exhibitions, markets, and events to name information tables, installations, and kiosks hidden among pavilions and exhibition premises ‘information islands’. (It is the meaning it is used in Hungarian public procurement documents, as well.) In the Danish Den Haag library, an information library between the enormous reading terraces serves as a place where librarians offer personal help.

A research group of the Chinese Hainan University is building an artificial island in the sea, with an explicit sea communication and information goal, they call this buoy-like construct their information island. And strangely enough, island countries also like to rename themselves ‘information islands’, signalling that by acquiring the exceptional positions they desire in the information industry, they make information itself their emblematic attribute (for example, Singapore sees great perspective in being the world capital of data, and Mauritius specialises in long-term data storage).

In Second Life, that used to be a very popular virtual reality empire for years, a team of American librarians created their own library empire in 2006, naming it the Info-island, that they used to provide the inhabitants of Second Life literature in various content types. When, due to a large-scale donor, they started to grow, information island became the information archipelago. A great New Zealand cyber security initiative shot 7 animated short films with Hector, the dolphin, and his friends in the centre, and a rich support site was made to go along with the episodes for parents and teachers – this was called the Hector’s World Information Island.

In the sea of information, the idea of libraries presented as islands of organisedness, trustworthiness, and credibility, offering protection and safe haven has independently inspired librarians to call one of the bastions of culture ‘information islands’. The Marooned Librarian (2012) blog was the pioneer that the library communities of multiple countries have picked up on.

EVALUATION AND RECOMMENDATION: The two meanings are built around the two possible aspects around the image of an ‘island’. In the first interpretation, the ‘island’ nature defines the meaning associating to being closed off and the lack of flow in the sense of lacking something, the other interpretations are exactly the opposite of this, as they use the idea of an island as something that provides protection and is different from its environment. We cannot claim that the inter-

pretations interfere with each other, as the base meaning of island and the context will always keep them accurate. The only use of ‘information island’ that probably would be better is in the sense of ‘kiosk, counter’.

References:

- Atherton, L. (2002): seamlessUK – building bridges between information islands. *New Library World* 11/12, 467–473.
- Den Haag City Library, library information island amidst large reading terrace.
https://www.pinterest.com/pin/394065036119256898/?from_navigate=true
- Hector’s World Information Island.
<http://hectorsworld.netsafe.org.nz/> [2016-01-28]
- Marooned Librarian: Watching the waves break from a sheltered information island.
<https://maroonedlibrarian.wordpress.com/> [2016-01-28]
- Hill, V. et al.: About CVL – the Community Virtual Library.
<http://www.infoisland.org/about-cvl> [2016-01-29]

J

Information jungle

~ an overgrowth of the information environment that may cause difficulties of orientation, and where, if we must enter, we have to arm ourselves against further danger.

Expressions used with the same, or very similar, meaning: information flow, information forest

Antonym(s): an orderly information environment

Expressions from related concepts: information explosion

Which category? An everyday expression with a clear meaning.

The phrase in the language system is used solely in economic theory literature.

One thing preserved the memory of the late Walter Stuart Francis Hamilton for posterity: In 1968, he presented the Arthur Norman Smith memorial presentation on journalism, and he chose ‘information jungle’ as the title (Hamilton, 1968). His thoughts were later published in a short booklet – only to be followed by a quarter century of silence, until the jungle metaphor suddenly became popular; this time, not for media, but for the growing Internet and multimedia.

If we earlier had information famine, a lack of information, an ‘information desert’ to reflect on, suddenly, facing challenges created by the abundance became important. The (still used) phrase ‘information forest’ only connected the ideas of density, vastness, and searching for paths, while ‘jungle’, with its Hindi-English origins, can even be seen as a comparative. Not only size is bigger, growth and dynamics are also different. The jungle can occupy huge (and new) areas, and its volatility may bear many dangers (or even consciously built traps; Infotér, 2012); finding points of interest is very hard. It is no wonder that on the Internet, lots of self-help ‘survival kits’, ‘how to be successful in the information jungle’ type guides meant for simple netizens are found. Many also mention that, as in the literal jungle, the aid of an experienced guide is priceless, in the information jungle of our age, a librarian may be a spiritual leader, someone who helps navigate and survive.

The roots of this thought and metaphor go all the way back to 1945, when cyber pioneer Vannevar Bush named people who find order in the accumulated mass of information ‘trailblazers’ (Evans, 2015). The use of information jungle has re-

cently (mainly due to the appearance of rival metaphors and even more effective expressions) retreated to a smaller and smaller area: it became typically used to name the ecosystem created around students with more and more diverse study materials and knowledge interfaces, as a cause of difficulties in choice, navigation, and learning disabilities (Boman-Olsson, 1996).

EVALUATION AND RECOMMENDATION: The jungle metaphor would be truly meaningful if it was used to refer to information sets that lack human touch and oversight: ones that grow in the ‘wilderness’, not traversable and not utilisable by human interference. Therefore we can only use it as a resource after it is tamed properly. And as there are lots of these sets (the huge amount of data created recently by sensors definitely belongs here), if we use it strictly in this meaning, it may have a *raison d’être*, and may become a permanent part of the vocabulary.

References:

- Hamilton, W. F. S. (1968): The information jungle: Arthur Norman Smith memorial lecture in journalism. University of Melbourne.
- Boman, J. – Olsson, M. (1996): A multimedial guide to the information jungle. *European Journal of Engineering Education* 3, 229–234.
- Evans, C. et al. (2015): The Trailblazers: The Art of Curation in the Information Forest. *Independent School Magazine*, Winter.
- <http://www.nais.org/Magazines-Newsletters/ISMagazine/Pages/The-Trailblazers.aspx>

Information junkie

~ a person for whom finding and learning about new pieces of information, useful or useless, becomes a source of joy and experiences.

Expressions used with the same, or very similar, meaning: information hoarder, infoholic

Antonym(s): infophobia, information avoidance

Expressions from related concepts: information addiction, information obesity, infomania

Which category? An expression with a high stylistic value that is relative rarely used, yet its meaning can easily be found out from the context, without any previous knowledge.

The phrase in the language system is typically used in ironic, funny contexts, blog entries, conversations, and short articles.

“The dealer of information narcosis is IT, one of the biggest enemies of developing self-awareness, and from the viewpoint of the individual, it only offers the option of escaping as far as possible from reality.” Out of the few non-English occurrences, the following text may be the most faithful representation of what one may think of information junkies.

In English slang, ‘junkie’ means a drug addict, drug user, but it is not used in a legal or medical sense; it is used as a pejorative term, talking about drugs and their users in a humorous context; when the message is not condemnation, but acceptance with some reservations.

Information hunting chosen as a method of achieving a good feeling and a relaxed atmosphere is a source of joy, and unlike Internet addiction, it does not have severe consequences. The main source of an information junkie is the Internet, but they are just as likely to collect from books, newspapers, the radio, television, and other sources. They are aware that they can only utilise a part of the collected information, yet they do not want to differentiate between them, they search and collect ceaselessly. They like information, they consider it a sort of growing, breathing, evolving creature. They often do not pursue them as solitary activities, but in small groups, sharing and discussing results (like ‘smoking weed in company’).

One can usually encounter this phrase on the blogs of people writing about information culture. Typically, authors of these texts generally use the term for themselves – half in irony, half in jest.

EVALUATION AND RECOMMENDATION: The controversy surrounding drug use in society has an effect on the exciting everyday expression that enriches our vocabularies. Also, the value of its use is decreased as instead of a light-hearted feeling, in a number of recipients, the 'junkie' part creates antipathy, protest, and a sense of problems. This is despite that information junkies are, even in the caricatures, not portrayed as emaciated, dying heroinists, but as happy-go-lucky, life-affirming rastafarians, smoking a joint of bits and bytes.

References:

<https://www.youtube.com/watch?v=iqz4abZTWJA> [2015-09-29]

<http://josephriggio.com/the-cost-of-being-an-information-junkie/> [2015-09-29]

L

Information ladder

~ a drawing that demonstrates the six levels of learning, or even the six levels of spiritual growth, from the lowest (data) to the highest (wisdom).

Expressions used with the same, or very similar, meaning: DIK model, knowledge pyramid, information continuum

Expressions from related concepts: information processing, learning, cognition

Which category? An independently created word as the name of a model. The expression did not become popular in the scientific community, but among adult education experts.

The phrase in the language system is a new arrival, its face is questionable.

Lifelong learning researcher Norman Longworth created his system based on earlier models, to display the various levels of studying on a single drawing. In his 'information ladder' model, every step forward is a step on the ladder. In order to reach the top level, wisdom, we must climb every 'step' of the way, get to know every level.

The ladder starts at the lowest level, that matches the DIK (Data, Information, Knowledge) model imported from library science to information and knowledge management in the early 70s, often referred to as the knowledge pyramid. According to Longworth, most school institutions cannot get their students 'up' even to these levels, yet the path should go on with further levels. These are understanding, insight, and wisdom. Achieving the latter one may become a life-long desired goal that everyone can fight for personally, but that may be supported with the appropriate educational program.

The special attribute of the ladder is that, unlike the knowledge pyramid that gets narrower as we go up, here, fields get wider going up: this reflects the difficulties of 'climbing' the levels.

Norman's information ladder became very popular in a very short time, it is often cited in various contexts. We believe that the reason behind this is the long-felt insufficiency of the DIK model, that authors have attempted to complete with newer and newer categories.

EVALUATION AND RECOMMENDATION: We believe that ‘information ladder’ will not be long-lived. Longworth’s model is nothing but an expanded DIK model, with all its controversies and insufficiencies. Different models are required to describe the nature of transformations and the dynamic structure of the personal information universe (neuropsychic completeness), and those will have other names.

References:

Longworth, N. – Davies, W. K. (2013): *Lifelong Learning*. Routledge, New York, 50–93.

Information liberation

~ a fight against information power and corruption, with the proper use of information.

Expressions used with the same, or very similar, meaning: open society

Antonym(s): information monarchy

Expressions from related concepts: information anarchy, information rights, transparency, information self-determination, information asymmetry, information games

Which category? A public (or even movement-based) term, an expression that represents an entire trend.

The phrase in the language system seems to be growing faintly.

“Information wants to be free.” One of the two classic adages of the internet. A ‘dense’, catchphrase-like statement that radiates the spirit of information society. One that may be taken literally and seriously. After all, how depraved mass communication is, how it is infiltrated by manipulation, biases, slander, and libel, is very widely known. How big a place does corruption, gathering its strength from secrecy, or bureaucracy, ready to do anything and its opposite for its interests with information, have in our lives? How it closes information off from people who would use it for political and profit-interest reasons.

In his manifesto-like 1998 book, Australian social scientist Brian Martin moves on from merely re-analysing well-known facts. He tries to offer alternative solutions for information liberation. Martin feels that the existing concept of freedom of information is compromised, as it has entered official nomenclature with the relevant offices and laws. This is why he prefers the more emotionally charged word ‘liberation’, used in the names of civil (and later, animal) rights movements. (‘Information empowerment’, that expresses a step-by-step endowment of information rights, is occasionally used.)

The activists of information liberation want to uncover corruption, fight misuses of information power, and draw attention to the information crimes committed by mass media and the controversies of copyrights, and the importance of the protection of information privacy.

The “medicine” of Martin is complete secrecy, effective action, raising awareness related to the feeling of danger, and keeping the topic on the agenda. Most of the criticism against Martin is gained because Martin and his followers often drift close to anarchism. (Martin often refers to the idea that the perfect form of information liberation would be if the state, as such, ceased to exist).

Because of its movement-like feel, the phrase became very popular, for example a group of hackers call themselves the ‘Information Liberation Front’ (even though a not-for-profit organisation that creates educational materials for small children also chose this name).

EVALUATION AND RECOMMENDATION: As long as there are forces that limit freedom of information in the real world, movements against them will stay relevant. The permanent presence and a minor increase of the use of the expression is expected. When translating into other languages, the phrase may work better as a possessive structure: “the liberation of information is being realised, from now on, nothing may be silenced, manipulated, lied about”.

References:

Brian M. (1998): Information liberation: Challenging the corruptions of information power. Freedom Press, London.

Homepage of the Movement: <http://www.informationliberation.com/>

Information lifecycle management

~ the conscious handling of information that serves as a resource of a company from their creation to the moment of deletion or long term archiving.

Expressions used with the same, or very similar, meaning: information economy

Expressions from related concepts: information management, information system, information flow, document management

Which category? Created for small-scale professional-public use in the private sphere.

The phrase in the language system has not yet diffused, as it is easy to generalise in other use environments, as well.

It is essential for a company or organisation to be able to track every modification in progress and every completed one regarding their information and any related actions, and that the original state is resettable after any modification.

Information lifecycle management makes this possible using special storage and search solutions that can handle the ever-growing amount of information in the IT infrastructure.

The expression comes from StorageTek (Storage Technology Corporation) from the '90s, who were the first to experiment with safe long-term information saving and storage technologies. (Experiments with technologies very similar to information lifecycle management had previously been carried out on paper or other physical means – microfilms, negatives, photographs, audio or video recordings, and other technologies) (Pearson, 2006).

Business registries have five phases that information passes through during lifecycle management. The process starts with their creation and/or receipt, continues with their allocation; use is followed by maintenance, and finally, the cycle is finished by making a decision regarding their fate. In exceptional cases, the further path of information may be blocked by a legal intervention, and as thus, in the future, it may not be accessible any more (Stephens, 2007).

If we exchange company for organisation, we realise that by becoming data intensive, a similar approach to the handling the registries and mass data created in the public sphere, education, and health care with a similar view.

The other strong pressure in this direction has to do with information itself being more and more valuable, therefore the value of every procedural routine for its handling also goes up.

EVALUATION AND RECOMMENDATION: As it exits the company environment, it becomes popular in a wider circle, the spreading of the concept and its extensive use may be expected.

References:

Pearson, T. (2006): Inside system storage: Volume I. IBM.

Stephens, D. (2007): Records Management: Making the Transition from Paper to Electronic.
ARMA International

Information literacy

~ a new basic ability (later: group of abilities) that goes along with reading, writing, and calculation, that new generations learn in school and as early users, and adults teach themselves an active presence in the information ecosystem as part of their lifelong learning.

Expressions used with the same, or very similar, meaning: information erudition, information competences, information proficiency

Antonym(s): information illiteracy

Expressions from related concepts: information culture

Which category? Professional use, primarily in library and educational environments, and their theoretical backgrounds.

The phrase in the language system is being differentiated at a rapid pace, it is present more and more as a collective category, as the name of second and third generation 'literacies'.

The expression was created by Paul G. Zurkowski in 1974, his text is still the point of origin of the huge literary tradition. Zurkowski first found the concept from the direction of industry and its growing needs, in order to thematise the differences between (digitally) literate and illiterate people in a concurrently maturing micro-computing environment, and to announce his programme to decrease the rift. And although since then, the environment of devices and programmes in which we perform information actions has transformed radically more than once (PC, consoles, laptop, smartphones as devices, chat programmes and video calls in communications, clouds and file sharing in data management, social networking sites), the functions that require basic information abilities did not change. Navigation, searching, selection, comprehension, processing-classification, evaluation, the full information management cycle, from recognising a need to application or the creation of new information.

The forty-year practice and literature of information literacy is the story of how various authors with various professional and scientific backgrounds interpret these information functions, and how they put definitions and classifications on it – and at the same time, initiate educational and library developmental abilities and active educational and development programmes. In the meanwhile, information literacy became a comprehensive umbrella category: it melted older forms into itself (e.g. media literacy, visual or graphic literacy), and followed the mainstream of information technology development, e.g. with data literacy.

The other great family of literacies reflected on the expansion of user worlds: today, we may speak of financial, participative, legal, psycho-, health, or scientific

literacies following the movement that results in the various types of problems in the various areas of use require different basic abilities.

EVALUATION AND RECOMMENDATION: Localising information literacy to national languages is more than a simple translation task. The relationships and differences between the levels of a complex world of phenomena can only be covered by a coherent family of concepts.

References:

- Zurkowski, P. G. (1974): The Information Service Environment: Relationships and Priorities. Related Paper 5. National Commission on Libraries and Information Science.
<http://eric.ed.gov/?id=ED100391> [2015-09-07]
- American Library Association (1989): Presidential Committee on Information Literacy. American Library Association, Chicago.
- Zurkowski P. G. – Kelly J. V. (2015): Zurkowski's 40 Year Information Literacy Movement Fueling the Next 40 Years of Action Literacy: Empowering „We the People” in the Information Age, All Good LiteracieS Press.

Information logistics

~ the professional assurance of the availability of client/situation driven production/service/operative information in the appropriate moment, in the appropriate format, in the appropriate make-up of content (and level of processing), the appropriate quality and quantity, the appropriate time, the appropriate place, for the appropriate people, at an appropriate price.

Expressions used in the same, or in a very similar meaning: information design, information management

Expressions from related concepts: information governance, information engineering

Which category? A technical term for the description of a definitive group of phenomena in corporate information management.

The phrase in the language system is virtually unknown outside the narrow professional range of users.

The ‘father’ of information logistics, created in the analogy of the complex field of knowledge that grew out of transport, logistics, is not great mathematician and library scientist, Shiyali Ramamrita Ranganathan (1892–1972), to whom multiple public websites attribute the invention of the expression, childishly mixing him up with Anand Ranganathan, a software expert who only published tangentially in the field.

The expression was introduced to the public by a late 70s article, more or less in its currently used meaning (Wormley, 1978), and its advanced level education started around the same time at Harvard University.

In three decades, around a hundred occurrences were recorded, then in recent decades, the number of researches, books, studies, courses, and trainings regarding the topic grow explosively (for a rich, fresh overview, see Haftor, 2012).

Information logistics in the general sense is an existing specialisation with a growing market value. Companies and large organisations organise their own information processes exactly like production: like conveyor belts. Information is flowing from somewhere to somewhere, and on their way, they always pass through the hands of the affected department or worker. Therefore everyone only sees as much information as they are programmed to need, and changes them as much as their scope and job descriptions require. The logic is that of manufacture: everyone only performs their given sub-task efficiently.

Therefore information management needs a ‘generalist’, someone responsible for the entire process and the entire information lifecycle. This ability to oversee

makes it possible for the workers to deal with the details instead of a strictly executive tasks, to question traditions, and to re-think processes – i.e. to not only apply, but test and develop knowledge. Information logistic experts must possess a comprehensive view over the basic devices, software solutions (occasionally even predigital technologies) used in the sub-systems of information gathering, production, processing, storage, and transmission – and at the same time, the defined organisational goals and functions, these can be used to serve.

EVALUATION AND RECOMMENDATION: Despite the fact that there are numerous courses with this name, information logistics is not an independently defined profession yet, it is more of a role. Information logistics is not a scientific field, either, but a challenging area of research, mostly researched by American, German, and Scandinavian higher education and academic institutions. We believe that, due to the appreciation of the role, the concept will quickly become popular and diffused in the next 5-10 years.

References:

- Wormley, P.W. (1978): Information logistics: Local distribution (delivery) of information. *Journalism Quarterly* 3, 635–644.
- Haftor, D. M. (2012): Information logistics. A proposed notion. In: Aseeva et al. (eds.): 11th International Conference on Perspectives in Business Informatics research. National research University Higher School of Economics, Nizhny Novgorod, 60–78.

Information loss

1. ~ damage suffered by an information unit in storage or transmission, because of which the complete information content can only be restored partially, in a limited way, or with a loss of meaning.

Expressions used with the same, or very similar, meaning: information error, information inaccuracy, information corruption, information distortion

Antonym(s): (permanent) information keeping

Which category? Numerous social sciences use it as a descriptive term, but the overlapping everyday meaning and use are also strong.

The phrase in the language system is widely diffused.

2. ~ the lack of keeping information swallowed and 'trapped' by a black hole in the vocabulary of astrophysics.

Expressions used with the same, or very similar, meaning: information paradox

Expressions from related concepts: information physics

Which category? A strictly defined natural science term.

The phrase in the language system is only known to astrophysicists, even educational press rarely uses it.

1. A phenomenon well known from school and community building exercises is that we experience considerable data distortion and information loss even in a small group, passing a simple message from person to person in a noisy environment or by making transmission deliberately harder (e.g. whispering). Communication science, getting its start in the early 50s of the last century, noticed the phenomenon, and started a multitude of research pieces to understand the particularities of information loss and to measure lost information. However, their results stopped at noticing the phenomenon time and again, and the phrase appeared more and more in the literature of organisational sociology and information management. The most typical state of information loss is inter-hierarchical, downward communication, in which as much as 80% of the content of the original message may be lost.

As network data transmissions grow to an incredible level after the Millennium, knowledge regarding the loss of various types of information communicated on various channels became more valuable, pushing research into a technological-software direction (Martin, 2010).

2. What happens to information inside a black hole? Ever since Stephen Hawking made the proposition that black holes destroy all material and information that falls into them in the mid-70s, more than half a dozen rival hypotheses have been set up as to what really happens to information.

Ten years ago, Hawkins himself came up with a new theory, according to which, information can leave, but in a very damaged form. The complete disappearance of information would have contradicted the laws of quantum physics (this is the information paradox). And while astrophysicists constantly refine their theories regarding the relationship of black holes and information, we cannot forget that the concept of information they use is very different from the neuropsychic information that social science uses: this basically eliminates the chance of the phrase making it to a wider range of use.

EVALUATION AND RECOMMENDATION: Strangely enough, the two phrases used in completely different contexts leave each other completely alone, therefore they can co-exist peacefully, maybe even for the decades to come

References:

- Sligo, F. (1995): Information Loss Revisited: How Different Levels of Staff Perceive Their Access to Work-Related Knowledge. *Asia Pacific Journal of Human Resources* 1, 60–74.
- Martin, M. K. et al. (2010): Impact of Information Loss and Information Error on Network-enabled Decision-making. Institute for Software Research, Carnegie Mellon University, Pittsburgh. <http://www.casos.cs.cmu.edu/publications/papers/CMU-ISR-10-127.pdf> [2015-03-26]

Information luddite

~ a citizen who, considering the advances of information culture and the technical and social innovation of information technology a force for worsening their own or their communities' life, arrives at more powerful actions than opting out and rejection: activism and the organisation of counter-movements.

Expressions used with the same, or very similar, meaning: cracker, hacker, information avoidance, information diet

Antonym(s): information enthusiast

Expressions from related concepts: information era, information anxiety, info-stress

Which category? An everyday term with a strong emotional content and historical reminiscences.

The phrase in the language system rarely appears in this exact form, but more often, in a paraphrased form using these words.

Many television screens, personal computers, or mobile phones have been broken in recent decades, but these events remind us not of the worker movements of the dawn of the industrial age, but of artsy performances. Today, ludditism is re-inventing itself as an approach, a counter-cultural mental position among the sets of the information age that comes after the industrial age (and therefore constitutes a class of neo-luddites).

“I am an information luddite” – some people introduce themselves in on-line discussions, immediately notifying us which side they will take in some current debate. Often (much like information enthusiast) it is used as a keyword of short profile descriptions. But the phrase “I don’t want to seem like an information luddite” is used at least as often, communicating both the disavowing of violent actions, but accepting a common fate with the rejection that luddites face.

But we may also find the purest form of information ludditism, the buffer zone of which is share-based economy. The first fault lines appeared in the music industry (with the battle between Napster and publishers), later Airbnb, with its infractions on the interests of the hotel and tourism industries, was put in the cross-hairs. The typical representatives of information ludditism must be taxi drivers who started a war against Uber, fearing for their livelihoods, and we must ask the question: what will happen when self-driving cars appear?

EVALUATION AND RECOMMENDATION: The next-generation jobs that balance the jobs lost because of informatisation, automatization, and artificial intelligence so-

lutions always come about with a delay, therefore information anxiety is justified and understandable, therefore the more common occurrence of the term, very apt (even in its tamed form), may be foretold for every major technology change in the future. Interestingly, there are more search results in Indonesian or Hungarian than there are in English.

Reference:

Berman, J. (2008): Books versus Google: Comment on Nicholas Carr's article (Blogpost, Aug.29.)
h <http://julesberman.blogspot.com/2008/08/books-versus-google-comment-on-nicholas.html>

M

Information Mafia

~ owners and moderators of Internet megasystems who exploit their power by providing information that seems objective and accurate, yet are manipulated and distorted.

Expressions used with the same, or very similar, meaning: information distortion

Antonym(s): hacker, as in “information freedom fighter”, “exposer of manipulation”

Expressions from related concepts: digerati, cyber elite (a narrow group controlling digital culture), algocracy (the rule of algorithms), conspiracy theories, manipulation, asymmetric information

Which category? Everyday.

The phrase in the language system is a new arrival, its fate is questionable.

The term ‘information Mafia’ was first used by David Auerbach, a well-known publicist at one of the leading on-line magazines, Slate, in 2015, for people who distort information filtering and presenting it in an order of search results according to business or other needs, misleading people who require accurate and quality information.

The concept was born in an argument. Two Libertarian economists, Tabarrok and Cowen, claimed in a communication that social information production and sharing, free data access, and the new, networked world of information resources that are free from earlier regulations and biases will hopefully lead to the disappearance of information asymmetries that distort the operation of the market. Auerbach debates this passionately, and cites numerous examples for how, lacking transparency, Wikipedia (the on-line encyclopaedia) operators, news and picture sharing Reddit editors and its aggressive overlords (the ‘early posters’ who appropriate topics), but even simple book reviewers on the Amazon website may distort information.

EVALUATION AND RECOMMENDATION: We trust that the term ‘information Mafia’ will not diffuse. It is not only a strong exaggeration to associate the failures of the more democratic information sharing systems of today to organised crime and

gangsters, but it also oversimplifies the debate and makes it ideological in nature. It makes it seem like the controversies, errors, dysfunctions, inaccuracies are the basic, definitive factors of operation; the goal of which is misleading customers. However, the only reason these popular sites stay alive is that they are typically useful, usable, fit for purpose, and offer visitors value; if this is not so, visitors can immediately leave for more credible, more trustworthy sites.

References:

- Tabarrok A. – Cowen T. (2015): The End of Asymmetric Information. April 6.
<http://www.catounbound.org/2015/04/06/alex-tabarrok-tyler-cowen/end-asymmetric-information>
[2015-05-20]
- Auerbach D. (2015): Buyer Still Beware Slate. April 15.
http://www.slate.com/articles/technology/bitwise/2015/04/end_of_asymmetric_information_why_tyler_cowen_and_alex_tabarrok_are_wrong.html

Malthusian law of Information

~ with the exponential growth of the amount of information, it is ever harder and more expensive to access actual pieces of information, as search risks increase, and human clarity is progressively limited.

Expressions used with the same, or very similar, meaning: data smog, information blindness

Expressions from related concepts: information glut, information overload, overflow, information flooding

Which category? A technical term (specifically: stable or debated meaning).

The phrase in the language system is virtually unknown, it will soon disappear, and remain a historical footnote.

Malthusianism grew out of the oft-debated thesis of English economist Thomas Malthus, according to which, the rate of population increase is larger than the production of products necessary for subsistence. According to Malthus, a population increase may be described as a geometric sequence, while the growth of the food supply is a simple arithmetic sequence. The growth ratios of the two are disproportionate. This cruel logic means that balance may only be created by periodic decreases of the population (wars, natural catastrophes, diseases, famine).

The Malthusian law of information, the word invention of American economist Hal Ronald Varian is based on this theory. In this case, the growth of the amount of information is disproportionately higher than the amount of sought information. The constantly growing information set has two considerable consequences. The first is that it is getting harder and harder to find one specific piece of information, and at the same time, the number of those who can find them is decreasing. The other is that people's horizons become more and more narrow. The two facts are closely connected. Information search, as an action, becomes more valuable, a more and more profitable financial activity.

Varian's thought and idea was put to use by Australian researcher Enrico Coiera (2000) in a healthcare IT environment, but it was no inspiration for other authors. This is no wonder. The base theory is erroneous, as – like with other network effects – quantity has no direct effects on the number and length of the necessary paths. As in a social network, node persons, while in information networks, metadata and organisation makes access shorter.

EVALUATION AND RECOMMENDATION: The erroneous nature of the theory sentences the associated language innovation to death.

References:

Coiera, E. (2003): Guide to health informatics. 2nd ed. Taylor & Francis Group, 326.

Coiera, E. (2000): Information economics and the Internet. *Journal of American Medical Information Association* 7 (3), 215–221.

Information management

~ the coordinated management, leadership, and organisation of information tasks in a company with the aim of ensuring and increasing operational efficiency.

Expressions used with the same, or very similar, meaning: data management, knowledge management

Expressions from related concepts: information systems, information management, information handling, information flow, information ecosystem, information governance

Which category? A management and economy science term with a progressively clarified meaning that describes an independent practical field (theoretically: independent scientific field).

The phrase in the language system is very well diffused, its meaning is consolidated.

The phrase ‘information management’ first appeared in the 60s, primarily at the planning of corporate computer projects, when the changeover from earlier manual methods to electronic processes had to be organised. And as this primarily meant accountancy and payroll, first occurrences are found in the literature of operation research.

In the meanwhile, large information institutions (libraries, news agencies) preferred to talk about information management and information wealth. The great, late 80s wave of informatisation came up with countless names to represent the high-level, comprehensive organisational management of company information processes, yet the term information management only became the prominent one by the early 90s. To this day, in English speaking countries, the common multiple is ‘company information systems’ or MIS – Management Information Systems. By the millennium, considering all the consequences of the on-line revolution, a comprehensive, expansive world of knowledge was built on this ever more coherent and organised discipline, located at the intersection of management science and informatics. Conceptual and contentual consolidation is now reflected by textbook and course titles and professional conferences; by now, we have managed to count almost a hundred information management related professional periodicals. The “maturity” of the concept is reflected by the fact that it keeps on growing newer and newer branches. Partially by the worlds of use (corporate, government, regional, etc.), and partially as the sub-fields of information management (systems, tools, strategies, services).

It is important to see that an information management definition and the interpretation behind it typically emphasizes and lists a number of typical tasks: may it be acquiring the necessary information, business intelligence, or managing pre-existing (acquired, produced) data (especially in the age of Big Data), decision support, adding value to pre-existing data, or efficient inter-organisational sharing. In fact, everything that can happen to information belongs here: knowledge and techniques necessary for keeping the information environment in check, and a successful existence in information ecosystems, using which information resources are well utilised. Information management and information handling, often used as synonyms, capture an important aspect, but not the entire one. Interestingly, in the moment, as the clear and accepted, generalised interpretations appeared, researchers started to follow the history of information management back to earlier and earlier times. To the organisational document management systems of the 1930s (Recall, 2014) to the 19th century office technology and the early 20th century intelligence revolution (Black, 1999), or even the archives of ancient high cultures (Wright, 2007).

EVALUATION AND RECOMMENDATION: When the concept of information management became clarified, it was expanded to such an extent that by now, it's time for its fission. Thus it is hard to contemplate the future of the concept without taking a look at developments at the field it represents. The routine operative tasks of information flow will belong here for a long time, but the informatics and technological background of this is built and organised by engineers, and not information specialists. Information governance that deals with the role of handled information in knowledge processes and strategic development is growing above management.

References:

- Recall Whitepaper (2014): From Cabinet to Cloud. The Evolution of Information Management.
<http://www.recall.com/resource-center/ebooks/evolution-of-information-management>
- Black, A. (1999): Information management in business, libraries and British military intelligence: towards a history of information management. *Journal of Documentation* 4, 361–374.
- Wright, A. (2007): *Glut: Mastering Information Through the Ages*. Joseph Henry Press.

Information mapping

~ a documentation technique and methodology in which information is placed structurally, based on certain viewpoints, aiming for a visual effect that aids understanding, use, and later recall of information.

Expressions used with the same, or very similar, meaning: infographics

Expressions from related concepts: information visualisation, emphasising, information space, information architecture

Which category? Technical term for a special methodology.

The phrase in the language system is barely known, it is only used in a narrow professional circle of people, its slow fading into the background may be expected.

Political scientist Robert E. Horn attempted to develop a method in his comprehensive research in the 60s that would make reception of new information and understanding them easier in communication. Information mapping was born as the result of these efforts, as he first reported it in a 1965 study.

In information mapping, pieces of information appear not as the usual, contiguous text, divided into paragraphs, but based on the structure that best aids the understanding of information, located in two-dimensional space. By creating information chunks and blocks, the information sender is looking to achieve a visual effect on paper or on screen that makes understanding faster and easier.

According to Horn, the following seven principles of information mapping must be kept in mind: (1) chunking, in which information is broken up into small, manageable units; (2) relevance, i.e. limiting each unit of information to a single topic; (3) labelling each unit of information in a way that identifies its contents; (4) consistency, i.e. the author must be consistent in use of terminology as well as in organising, formatting, and sequencing information; (5) integrated graphics within the text to clarify, emphasize, and add dimension; (6) accessible detail, organising and structuring information so that those who need detail can access it easily, while those who do not can easily skip it; (7) hierarchy, forming information into various sized units, and the author must title them all. All these rules are meant to ensure that information remains structured, well constructed and transparent, and the desired knowledge is transmitted to the readers in a clear and simple way.

Information mapping is especially useful, therefore liked and widespread in education, visualising study materials and technical materials, but it can also make the documentation of large projects and enterprises clearer.

EVALUATION AND RECOMMENDATION: Despite its diffusion in certain user worlds, neither the practice, nor the expression is widely known. At the same time, the gloriously advancing phrases ‘information graphics’ and ‘infographics’ have developed into independent professions, well-known in the language of the press, as well, therefore their visual revolution will likely force out information mapping that basically focuses on linguistic tools and only uses graphical solutions as supplements.

References:

- Horn, R. E. (1974): Information mapping. *Training in Business and Industry* 11 (3).
Horn, R. E.: How High Can it Fly? Examining the Evidence on Information Mapping’s Method of High-Performance Communication
http://web.stanford.edu/~rhorn/a/topic/stwrtng_infomap/HowHigh.Ch1.pdf [2015-11-12]

Information market(place)

~ the abstract “space” of the exchange of information goods and information services, that also offers the full cross-section of the rival selection of the given types of information.

Expressions used with the same, or very similar, meaning: digital market

Expressions from related concepts: information goods, information property, information economy, information trade

Which category? An economy-taxonomy descriptive term.

The phrase in the language system is present with a low intensity, but stable manner.

The terms telecommunications marketplace and IT marketplace became popular in the early 90s, as more and more competing actors appeared on the IT, Internet, and mobile phone sectors. These, however, are still well-separable areas, even if their owners overlap more and more. This is why information market(place) could not grow roots as an umbrella term, even though there were some vague attempts in this direction. The main reason of all this is that, by this point, the information market had been a mature, multi-actor area, clearly and narrowly because of enterprises that traded information as goods.

Even in the late 19th century, numerous companies made their living offering legal information services, and the company information are later joined these.

The ramp-up of industrial research and development from the mid-1950s laid down the groundwork for the creators of specialised abstract processes that transfer the most recent results of science and technology. Later, the markets of financial information and later, business intelligence services also grew up. By now, there are dozens of specialised information services – including ones for special intellectual properties such as the prediction market – and thus, the information marketplace developed into something very segmented in every direction. Talking about national, then regional information markets became meaningful, and not surprisingly, the concept of the single European Union information market as an EU economic policy goal also became part of the agenda.

The growth of the information market was, for a long time, driven by information itself becoming cheaper and cheaper, while transaction costs remained high. Later, transaction costs started to fall, especially due to the automatization of data collection and artificial intelligence solutions that aided information retrieval. The value of knowledge produced from information was valorised, therefore the knowledge market is cannibalising the information market from “above”.

EVALUATION AND RECOMMENDATION: The correct domain of interpretation of the expression is the systemic level of macroeconomic interrelations, its more and more consistent use is expected there.

References:

Linde, F. – Stock, W. G. (2011): Information Markets. A Strategic Guideline for the I-Commerce.
Berlin, New York, De Gruyter Saur.

Information maven

~ a representative of an information small world, a knowledge area, who is extraordinarily well versed in the news, resources, and debates regarding a subject. They share their knowledge, and should be listened to, as they not only follow, but shape discourses, as well.

Expressions used with the same, or very similar, meaning: e-mavenism

Expressions from related concepts: information star, information hoarding, information sharing

Which category? An expression made up and popularised by analysts of the contemporary information scene for representatives of an everyday information role and behaviour. It will not likely turn into a technical term, but as it is ingenious and well usable, it may have a long life.

The phrase in the language system has been long present, it is used rarely in a clear meaning.

Who reads and knows everything about a topic? Who knows all the resources? They go where one should research. But they do not merely collect and hoard: by knowing about one or a few topics with a depth that is unknown to others, their knowledge is not merely lexical; it attains a new quality in understanding. Facts are digested and processed, reorganised again and again. Therefore they can recognise hidden interrelationships and connections, and when fresh phenomena must be measured or something unexpected must be professionally evaluated, their diagnoses are fast and dead accurate.

They do all this as a lifestyle. It is not their job, but everyone knows they are capable of doing it.

If they find a job where they can live out their passions professionally, there is no one happier. And this is not enough: it is known that they continuously and selflessly share their knowledge with their circle of friends. As they continuously hang out on the most important information channels, they are the first to send an indispensable link, a news item about the publication of an important book (that they have, naturally, read by that time), or a popular article (about which they also express their brief, and usually negative, opinion).

One may receive a sudden e-mail from an information maven, in which an interesting search result is found – and we may find ourselves using it ‘in anger’ the next day, as it proves so useful. In English speaking countries, they are called mavens back in the age before the Internet, using the Yiddish term for a wise person who shares their knowledge with others. The expression that entered the English language in 1952 became popular in the United States in the 60s, but it

only became truly well diffused with the appearance of the ‘market mavens’, as some possessed such an amount of market information on various subject that they had to be taken into consideration. Stock exchange mavens were especially respected, who shared their intellectual treasure troves not for financial gain, but for the joy of transferring knowledge. The knowledge industry still likes to put the word ‘maven’, that came to sound good, in the names of product or companies. Along with the Internet, e-mavenism and its ‘twin’, electronic word-of-mouth communication (eWOM) were born – as interesting phenomena and as subjects of sociological and marketing research.

Information maven is a word with a complex meaning, and very hard to translate. They are not mere information collectors and distributors as Malcolm Gladwell’s quite diffused typology suggests. They are not mere experts, as excellent linguist Steven Pinker believes. They do everything with their interest – collect and disseminate it, be experts in it, even shape meanings (that is why they are sometimes called ‘meaning connoisseurs’.

EVALUATION AND RECOMMENDATION: A word-by-word translation is problematic in every language, therefore a cultural translation is needed.

References:

- Gladwell, M. (2000): *Tipping Point, How Little Things Can Make a Big Difference*. Little Brown
Pinker, S. (1994): *The language instinct. How the Mind Creates Language* New York: W. Morrow and Co.

Information maze

~ the empire of content unavailable as it is built with a logic not understandable to non-initiated people, content that seems like technobabble, or because of the excessive richness of the information environments, in which it is very easy to get lost, disoriented, and make navigational mistakes.

Expressions used with the same, or very similar, meaning: information labyrinth

Antonym(s): information architecture, information repository, information environment

Expressions from related concepts: information jungle, information system, information accessibility, information deficit

Which category? An occasional, everyday word creation that is repeatedly ‘discovered’ by various actors in various contexts.

The phrase in the language system has not diffused, but because of its strong feel, the meaning becomes clear from the context at every occurrence.

We can thank a book by American architect and architecture historian Marcus Whiffen for the phrase, in which he wrote about information objects that are designed so badly as to make physical navigation harder (Whiffen, 1966).

It appeared in the 70s in medical, chemical, economy, electric technology, and intellectual property protection contexts, completely independent of Whiffen, but in these, it is used to reflect explicitly on the difficulties of searching in bloated texts databases. The literature of acquiring business information, that occasionally seems hopeless, gave birth to the phrase ‘business information maze’ (Haythornthwaite, 1990).

The appearances of the phrase have a characteristic rhythm: when the quantity of available information increases because of new technologies, use is increased.

When technologies that support handling, reaching, and organising the increased mass of information also appear, the voices speaking of a maze grow quieter.

People with disabilities (seeing impaired people, people with reading disorders, etc.), for whom taking hold of the information carrier itself, the text or image, is a difficulty, are exponentially faced with challenges of information searches, even in an Internet environment. In their case, not only do rules on ‘information accessibility’ have to be legally prescribed, but all solutions using which their navigation can be made easier must be considered – for example, by the customisation of websites.

EVALUATION AND RECOMMENDATION: Although the expression is well usable to name badly constructed information environments, there is not enough ‘tinder’ for it to become an idiom.

References:

Whiffen, M. (1966): *The architect and the city*, Cambridge, Mass.: M.I.T. Press.

Haythornthwaite, J. (szerk.) (1990): *The Bussiness Information Maze: An Essential Guide*. Aslib Publications, London.

Information mess

~ a chaotic, unclear situation created by the disorganisation and the problematic nature of available information.

Expressions used with the same, or very similar, meaning: information trash, information jungle, information anarchy

Antonym(s): structured information

Expressions from related concepts: information noise, information pollution, information fragmentation, misinformation, information overload, information anarchy

Which category? Its representatives are attempting to ‘elevate’ it into a technical term by not connecting the content that can be understood easily in an everyday sense to specific, uniquely interpretable situations.

The phrase in the language system is relatively diffused in English speaking areas, but in other places, it appears not as a defined term, but as a repeating unique word creation, a descriptive turn of phrase, while the professional discourse on the phenomenon itself has already started.

“Modern world, rushing life, information mess” – sang Hungarian band ‘Ős-Bikini’ in 1984, way before the explosion of mobile phones and the Internet. And similarly, the phrase has been used for decades in Hungary and abroad to describe the feeling that something else had overtaken the regular way of the information environment. (But IT experts use it to this day to describe the situation that comes about because of the insufficiency of the so-called corporate gateway protection devices).

Later, some social scientists believed that information garbage had become a kind of background noise on a social level that should be recognised, understood, and analysed to be able to plan interventions (Gradmann, 2001). Others go as far as claiming that the technological and social pressure on the world of information make it chaotic, impossible to see through, and disorganised, therefore these can feed the diffusion of misinformation, and make the user rightly doubtful and suspicious. According to yet others, the distorted information space is not a result of the errors of (information) society, but is a necessary characteristic of contemporary culture, a result of everything that also causes its success.

Australian media scientist Jonathan Marshall summed up the 10 Information Mess Principles, (IMPs), that include multiple forms of information overload, obsolescence, and distortion (Marshall, 2014).

Although these approaches reflect on real phenomena, they overvalue the significance of their subject (they occasionally speak of the “age of information

mess”), therefore they get close to the panic literature. They only discuss the disorganised elements of contemporary information ecosystem, and this, without taking a look at the very different states of organizedness experienced in the various information environments of various user groups and without involving techniques for increasing organisation leads to inaccurate conclusions. (Not to mention that it is presented as a universal statement compared to the subjective, personal attributes of perception of noise and tolerance for disruptions.)

EVALUATION AND RECOMMENDATION: Use on the level of scientific term has a limited future, as it is based on insecure start points and erroneous preconceptions, and biased theories. In an everyday sense, used for unique situations, it may remain popular.

References:

- Gradmann, S. (2001): Reducing White Noise – Towards a common information garbage policy, EUNIS, 69–77.
<http://edoc.hu-berlin.de/eunis2001/a/Gradmann/PDF/Gradmann.pdf> [2015-03-26]
- Marshall, J. P. (2014): The Mess of Information and the Order of Doubt. Global Media Journal, Australian Edition, 2.
<http://www.hca.uws.edu.au/gmjau/?p=308>

Information metabolism

~ an analogy to biological metabolism, the process in which the human psyche acquires and processes information, then in part, uses it to build its inner world, and in part, discharges it to the outside world.

Expressions used with the same, or very similar, meaning: information psychoanalysis, socionics

Expressions from related concepts: information foraging, information digestion, information flow, information theory

Which category? A basic term created as part of a coherent conceptual network to support a scientific theory.

The phrase in the language system offers a reference only to people working with the theory constructed by its creator.

A virtually unknown Polish psychiatrist, Antoni Kępiński (1918–1972) came up with the concept of information metabolism, and expanded upon in his books published posthumously in the 70s.

The goal of Kępiński's conceptual reflection was to better understand a number of psychopathological diseases, such as schizophrenia and depression. His starting point is biological-philosophical: every organism is an autonomous, half-open system, which keeps its own, complex body in balance using a two-way relationship with the environment. The most important characteristic of life is energy and information exchange with the environment. Homo sapiens can, due to their exceptionally advanced information metabolism processes, contact the outside environment in a general sense, and the sense of self also comes from this ability.

Information metabolism also happens in our inaccessible unconscious (Kępiński's term: pre-conscious) mind, but the most important processes are consciously created images (representations) of reality, and the alternative actions defined by the models built from them. Every piece information and knowledge is closely related to action. Mental health depends on the quality and quantity of information inserted and digested as 'nutrition'.

Lithuanian psychologist Ausra Augustinavičiute (1927–2005) expanded upon the concept of information metabolism, creating an excitingly unique personality typology using a combination of the theories of Carl Jung and Kępiński. According to the theory named socionics (or sometimes 'information psychoanalysis') that is, to this day, immensely popular in Russian scientific life, various types of people have different information management styles, and their information metabolisms have numerous unique characteristics. The typical "behaviour classes"

of attention, interest, memory, and motivation may be identified and deducted from the above, and, mixing them with Jung's typologies, we arrive at a personality typology that has a higher resolution than any previous ones.

EVALUATION AND RECOMMENDATION: Unfortunately, the theories and conceptual innovation of the Polish and Lithuanian scientists did not enter the English language flow of texts that defines the world of scientific publications more and more, therefore they are not well received, and virtually unknown outside their homelands. Thus it is no wonder that the expression is not used in the special sense of the theory, while it is sometimes used as an everyday analogy.

References:

- Kapusta, A. (2007): Life circle, time and the self in Antoni Kępiński's conception of information metabolism. *Filosofija-Sociologija* 1, 46–51.
- Socionics Institute: http://en.socionics.ru/index.php?option=com_content&view=article&id=257&Itemid=27 [2015-03-24]

Meta-information

*~ information regarding the base information being communicated.
I.e.: information about information.*

Expressions used with the same, or very similar, meaning: metadata

Antonym(s): base information, object-level information

Expressions from related concepts: meta level, reflectivity, information metatheory

Which category? Technical term with a clear meaning.

The phrase in the language system only appears outside scientific terminology in professional circles where the term is used as a job requirement (e.g. for librarians).

In linguistic expression and communication, there are two types of information: base and meta-information. The first refers to the reality that surrounds us, and is communicated by the information sender to the recipient. (Example: the patient is getting better). The latter, meta-information means the pieces of information that refer to the base information that is communicated. The elements of this do not refer to reality, only expand upon the base information. (Example: as far as I know, I have heard, I think, based on the chart, etc.)

Metainformation is generally conveyed via verbs that provide information regarding the method of information gathering, the subject of communication, the function of information, the state of the sender and the recipient, etc. During communication, metainformation brake base information transfer again and again in order to make them easier to interpret and comprehend. Our earlier example demonstrates this process: I have heard that the patient is getting better. In this sentence, the base information that must be conveyed is regarding the state of the patient. However, as metainformation is present in the sentence before the main information, the recipient can understand that the base information comes from someone who is not a completely trusted source, therefore the sender is only relatively certain that the patient is getting better.

Metainformation is also used by other scientific fields, in the analogy of the concept used in linguistics, such as biology (regarding DNA chains), programming, telecommunications, and library sciences. Where information is stored and displayed in a database, metainformation is interpreted and used as metadata.

EVALUATION AND RECOMMENDATION: the interpretation of ‘information about information’ is strong, stable, and clear. Still, it has a challenger: a number of thinkers use metainformation to the analogy of metaphysics: to express that some-

thing is 'over' information. This is a hard-to-uncover area that is important to approaching information itself from a more comprehensive conceptual dimension. Luckily, this is discussed more and more inside information metatheory, therefore it will likely not cause a disturbance of the meaning in the future, either.

Reference:

<https://searchoracle.techtarget.com/definition/metainformation>

Information metatheory

~ an approach that considers information theory as the subject of scientific scrutiny. It simultaneously takes a stand regarding the origin points, concepts, and frameworks in which information phenomena is (and should be) described and analysed, the previous solutions and conceptual systems, their changes, the creation of their scope, and their reflections on each other.

Expressions used with the same, or very similar, meaning: information philosophy, informology, informatology

Expressions from related concepts: information science, the unified theory of information

Which category? Technical terminology – an accepted and often used expression with explanations that differ in the number and type of metatheories of information.

The phrase in the language system is used in a narrow scientific field, and even there, it spreads slowly, as one must be skilled in multiple scientific fields in order to be able to reflect to the metatheory.

Science philosophy has used the term ‘metatheory’ for decades in multiple environments, with competing meanings (some interpretations refer to being ‘over theories’). After experiments that searched for the metatheory of communications, the first metatheory-based publications regarding the sciences of information appeared in the early 80s.

These were first sensitive to shared moments (the basic concepts, origin points without which information theory is not possible regardless of approach or scientific field embeddedness), however, later the emphasis went to how the different origin points of metatheory positions, born in different practical communities and based on different world-views can lead to wildly different concept and problem identification. How information itself means something completely different, and why different research questions arise depending on the person and their metatheory background.

In 2005, Marcia J. Bates described 13 independent, competing metatheories of information. Today, Jenna Hartel’s ‘Metatheoretical Snowmen’ are probably the best known and most popular field of information metatheory.

Depending on the metatheoretical origin points from which we approach the world of the snowmen, we receive different answers regarding the reality in which it exists, the meaning of information in this reality, and the tools that may and should be used for its scientific analysis.

EVALUATION AND RECOMMENDATION: Despite the success the metatheoretical snowmen have among library science students and that it offers an opportunity to learn while playing, discussion regarding information metatheories can only happen in a complex conceptual and disciplinary space, in a way that requires much background knowledge. We do not expect the concept to ‘break out’ of this isolation in the near future.

References:

- Bates, M. J. (2005): An introduction to metatheories, theories and models. In: Fisher, K.: Theories of information behavior: A researcher’s guide, Medford, NJ: Information Today, 1–24.
- Hartel, J. (2012): Metatheoretical Snowmen: A Pedagogical Gedankenexperiment. In: Information Metatheory. ASIS&T Bulletin.
https://www.asis.org/Bulletin/Aug-12/AugSep12_Hartel.html [2015-08-26]

Misinformation

~ fake or deceiving news that has diffused by accident.

Expressions used with the same, or very similar, meaning: disinformation, pseudo-information

Antonym(s): perfect information, full information, complete information

Expressions from related concepts: information flow, information loss, information fragment, lie, deceit, urban legend, false knowledge

Which category? An everyday term with a conventional meaning. The phrase is inserted into the language system, but its use is occasional and rare.

Scaremongering, mistranslation, the author's or the editor's lapse of inattention? The survival of urban legends? The distorting spectacles of prejudice? Erroneous, therefore potentially misleading information is born and spreads without any conscious effort both orally and in the media. (Therefore it is essentially different from disinformation, i.e. made-up, unreal content diffused consciously.)

With the appearance of the Internet and the exponential growth of the content, the probability and amount of encountering misinformation also grew. Forwarding, sending links, re-tweeting, posing all increase the chance of the multiplication of a piece of misinformation (even without considering the option of someone misunderstanding the piece of information that was already misunderstood to begin with). For an insignificant piece of news, this process probably has consequences that are just as inconsequential, but an important piece of information being erroneous – that may affect politics, the world of finance, society, or even the private life of a person – may have more serious consequences.

Critics of the phenomenon believe the reason to be the lack of control, that, according to them, are more complicated than what mere refusal or panic leads us to believe. The question is not whether the amount of misinformation will grow, but whether their number will follow the growth of the total mass of publications, or grow at a slower faster rate? How do correction mechanisms work? Did new forms of misinformation appear? Do the various pieces come together in a “misinformation cloud” that must lead to cultural and advocacy reactions.

Instead of analysing the causes of the phenomenon, let this be enough: prevention is the effective and teachable way of processing and recognising misinformation. Citizen defensive techniques, communication culture, and critical literacy.

And of course: numerous pieces of research to increase our knowledge.

Ones like the result that bilingual people recognise misinformation more efficiently.

EVALUATION AND RECOMMENDATION: Misinformation has long entered multiple languages, and it is used in a clear sense.

References:

- Stahl, B. C. (2006): On the Difference or Equality of Information, Misinformation, and Disinformation: A Critical Research Perspective. *Informing Science Journal* 9.
<http://www.inform.nu/Articles/Vol9/v9p083-096Stahl65.pdf> [2015-09-25]
- Mintz, A. P. (2002): *Web of deception: Misinformation on the Internet*. CyberAge Books.
- Nguyen, D. T. (2012): Sources of Misinformation in Online Social Networks: Who to suspect? Military communications conference.
<http://www.cise.ufl.edu/~mythai/files/Milcom12-Dung.pdf> [2015-09-25]

Mode of information

~ a category created to the analogy of Marx's mode of production, an attempt at capturing the social change of late capitalism. Refers to the new state of perceiving ourselves and reality in a completely new way in our electronically mediated environment.

Expressions used with the same, or very similar, meaning: information society, post-information society, information socialism

Antonym(s): industrialism

Expressions from related concepts: formation theory, information age

Which category? Technical term.

The phrase in the language system has amassed only minimal references, only Poster, authors writing about Poster, and authors who refer to him use it.

In the mid-80s, American communication and media researcher Mark Poster attempted, in two volumes, to grasp the greatest change of our age, the origin point of which is electronically transmitted communication, starting from a language- and text-centred post-structuralist approach, but also transcending it.

Before formulating his own viewpoint, Poster overviews the elephants on whose shoulders he was standing, creating his concept: Daniel Bell and his postindustrialist society concept, Jean Baudrillard's views on television, Michel Foucault's views on databases, Jacques Derrida's computer philosophy, and finally, Francois Lyotard and post-modern politics.

Poster's central thesis is that electronic media radically rewrites the communication experience that connects humanity and reality. The world of writing has less certainty and concreteness, language represents reality less and less, it reconfigures it, and partially, creates it itself.

EVALUATION AND RECOMMENDATION: The best social scientists of their ages attempted to understand and utilise Poster's hard-to-digest, very abstract thoughts. Back then, all of his twists seemed very original, exciting, and fertile. Today, in the age of smartphones, off-line TV, and on-line content consumption, there are few exciting factors (e.g. in the structural analysis of TV commercials) that would help us better understand the world. Even the new left-critical social scientists have abandoned Poster – likely because their interest turns to more recent, modern, and accurate authors for ideas. Mode of information, as a topic, is less and less discussed, and the expression is moving towards the underworld of being forgotten. Recently, it has occasionally appeared in a different sense: if a multi-

functional machine has multiple modes, and one of them is information-related, turning the machine to this one is the mode of information.

References:

- Poster, M. (1985): Foucault, Marxism, and History: Mode of Production Versus Mode of Information. Blackwell.
- Poster, M. (1990): Mode of information: Post-structuralism and Social Contexts. Polity Press.
- Introduction to Poster: Jeliaskov, D. – Blumberg, R.: Virtualities (Chapter 27.)
<http://cs.brown.edu/~rbb/risd/jeliaskov.ch27.pdf>

Information monarchy

~ a form of organisation management in which information is centred around one central power, typically one person, their family, or circle of interest.

Antonym(s): information sharing, democratic information culture

Expressions from related concepts: autocratic, dictatorial leadership, information appropriation, information power

Which category? An uniquely created word for a powerful description of a phenomenon. It did not become a technical term.

The phrase in the language system is barely present. It was only used rarely in its 'golden age', and it will soon disappear.

Before the millennium, strategic company management expert David A. Klein had the idea to present leadership styles in the analogy of power types known from politics history. He differentiated between anarchic, feudal, monarchic, and federal leadership styles, organising his ideas around these four categories. Interestingly, he described monarchy mostly with information categories, thus it is no accident that the most quoted term was "information monarchy".

The term 'information monarchy' refers to the situation when organizational power, key information ownership, and decision-making rights are all in the same hand. Every rule regarding information management is born here. Organisational units, departments, or groups possess typically less information policy autonomy. In certain cases, the information monarch may, as a 'benevolent ruler', provide slightly more freedom for information management, but the final decisions are kept for a monarch. HIPPO – Highest Paid Person's Opinion is an apt term to describe this phenomenon.

Maybe the only remarkable element of Klein's failed metaphor is that it points out that the primary drawback of information monarchy is that if the decision-maker resigns (is made to resign) or dies, there can be no continuity in information management. The successor may lose so much information that the continued information management of the company without severe losses may become very difficult.

EVALUATION AND RECOMMENDATION: The expression has no heuristic power that makes something visible or lets us see new connections. It was sentenced to death at the moment of its birth, it is a miracle that it had life signs for a couple of years.

References:

Klein, D. A. (1998): The strategic management of intellectual capital. Butterworth-Heinemann.

Information monopoly

~ the information superiority or exclusive information ownership of various social groups and the institutions that embody them, which can easily be turned into a range of economic, political, or other benefits. An extreme case of information power and information asymmetry, materialising in pricing for economy actors, and the extension of power for political actors.

Expressions used with the same, or very similar, meaning: information power, information appropriation, information superiority

Antonym(s): information pluralism, information freedom, information public good

Expressions from related concepts: information quarantine, encryption, controlling information channels

Which category? An umbrella term applicable for a large family of phenomena, and as it appears to be a sub-type of ‘monopoly’ known from political economy, it seems to be a technical term.

The phrase in the language system is used and preferred in a variety of situations, with numerous international occurrences.

Information monopolies have existed ever since in the societies that grew ever larger, information flow became mediated, and the channels, technologies, and specialists of mediation were controllable by economic or power-related methods. There are numerous historical examples of how representatives of the ruling elite or churches managed to monopolise various forms of information, often creating the requirements of information power in an institutionalised way. (We have to admit: the final goal of censorship and physical action against representatives of unwanted views is always to ‘purify’ the thoughts of the offer at the thought market, removing disturbing diversity from it.) The paradox of information monopoly also stems from this. “In the past, there was a sort of information monopoly that people perceived, and therefore, they were sceptical towards propaganda. However, when there are critical voices – regardless of how quiet or marginal they may be – state propaganda is only one of the competing opinions, and in these case, people are more likely to believe it” (Schedler, 2016).

The modern metamorphosis of information monopoly was first produced by the business sector (where time advantage in information acquiring could become a source of economic advantage), and perfect and imperfect information monopolies, reflecting on differences in pricing, immediately became an economy theory category.

In the second half of the 20th century, media joined previous actors: more and more people realised that with the concentration of the media industry, a double monopoly is created. On the one hand, this creates a monopoly (in a competition law sense) in a sector of the information industry, on the other hand, with these, the world of transmitted news and content may be distorted in one direction or another. In Ben Bagdikian's book, first published in 1983 (with innumerable re-issues and improvements), he identified 50 company groups that ruled more than half of the media market. Four years later, by the second edition, there were only 29 because of the mergers and acquisitions. He had reason to fear that, by the end of the 90s, only half a dozen actors will stay on their feet (Bagdikian, 1982).

However, along came the Internet, and media barons (as Apps, 2014 puts it) lost their monopolies. However, new information monopoly-building cycles started immediately, in which the most influential actors of the internet (primarily Google and Facebook) are the targets of accusations of monopoly – occasionally very correctly. (The latest scandal occurred in May 2016, when former Facebook employees admitted having had to modify the newsfeed to disadvantage the conservative side.)

EVALUATION AND RECOMMENDATION: In the public discourse of information monopoly, today the most common actors are superpower governments, wizards of financial markets, and the companies with the best positions on the Internet. As to which information monopolies are maintained by whom, where, for which interests, and what immediate and long-distance dangers this poses, opinions differ, and there is a strong debate. In this debate, the concept of information monopoly serves us very well, and it will stay well-used up to the point where extremely asymmetric information structures remain in reality.

References:

- Bagdikian, B. (1983): *The Media Monopoly* Boston. Beacon Press.
- Apps, P. (2014): Analysis: Press barons lose information monopoly in Twitter era. Reuters Technology July 14. <http://www.reuters.com/article/us-newscorp-networking-idUSTRE76D5CA20110714> [2016-03-16]
- Jarvis, L.: Citizens Information Council aims to bust the „information monopoly“. *Tuc Bsns* 2, 1–22.

N

Information needs

~ the exposition of persons or groups, depending on their prevailing situation, to the various typical classes of information that have a definitive role in their activities, actualised in a drive to satisfy their constantly renewed conscious or subconscious information needs and in constructing institutional information services.

Expressions used with the same, or very similar, meaning: information need, lack of information

Antonym(s): information avoidance

Expressions from related concepts: information search, information scarcity, information request, information anthropology

Which category? A highly loaded term of information science. As it expresses the parallel existence of numerous information needs, its base form is plural, yet singular use may also be correct, as the chosen types of needs may be studied by themselves, as well.

The phrase in the language system is going from an interpretation related to universal human information behaviour to one narrowed down to groups that use information intensively.

There is no area of human activity that is not attached to an information need. Only an appropriate information base can support an appropriate perception of environmental changes, making the most appropriate decision, and adequate action. Its lack or the lack of its availability may lead to an incorrect perception of reality, bad decisions and failed behaviour, in extreme cases, it carries considerable danger.

Therefore the concept should appear in all general pyramid of needs, yet only the literature on those social subsystems where efficient performance is highly dependent on the quality and quantity of available (achieved, processed, stored, searched, and promoted) information considers it important. These primarily include the worlds of research and development, production, politics, and the media.

The beginnings of studying information needs in depth go back to 1948, when a pioneer of information sciences, John Desmond Bernal first spoke about the

detailed study of user viewpoints at the Royal Society scientific information assembly.

The phrase itself was first used by Robert S. Taylor in a 1962 article (The process of asking questions), in which he analysed the mutual effects of researchers and available information systems and found four systems of information needs, decades before the similar findings of cognitive psychology:

- the actual, but unexpressed, need for information (the *visceral* need);
- the conscious within-brain description of the need (the *conscious* need);
- the formal statement of the question (the *formalized* need);
- the question as presented to the information system (the *compromised* need)

After Taylor's model, often quoted for half a century, Tom Wilson drew complete attention to user needs and the institution that was definite in serving them before the digital revolution, the library. Along with expanding library collections and improving facilities and services, uncovering user information needs and information searching behaviours based on the subjects of interest, operations, information environments, and geographical characteristics. In the meanwhile, the world of users has widened, after researchers, government officials, lawmakers, parliament representatives, entrepreneurs, inventors, cultural service providers, teachers, students, and even skilled workers have entered the ranks of the groups characterised by a growing information need.

Around the Millennium, on-line information services both raised the average level of information needs and created innumerable new information provision institutions, while the library managed to save a good part of its past privileged situation into digital culture.

EVALUATION AND RECOMMENDATION: In the world of practical, everyday information consumption (covered by applications and services), the generic, information anthropologic original meaning of the term fades step by step. Therefore sooner or later, another phrase will emerge, or with the strict reinterpretation of the needs, a conceptual sharing of the workload will be initiated.

References:

- East, H. (1998): Professor Bernal's 'insidious and cavalier proposals': the Royal Society scientific information conference, 1948. *Journal of Documentation* 54 (3), 294–302.
- Taylor, R. S. (1962): The Process of Asking Questions. *American Documentation* 13 (4).
- Wilson, T. D. (1981): On User Studies and Information Needs. *Journal of Documentation* 37 (1), 3–15.

Information neighbourhood

~ an environment, most commonly a virtual community, in which users search for and share educational and useful information that match their interests.

Expressions used with the same, or very similar, meaning: information community

Antonym(s): information distance

Expressions from related concepts: information search, virtual community

Which category? Professional-public use in the universe of network content provision.

The phrase in the language system is barely known. Although a chain of references came to be, in which authors present and utilise the concept reflecting on each other, but the use does not become palpably more complex or deep.

The concept was first used in the mid-90s by Gary Marchionini (1995) in his book compiled from his treatises on information searches and information exchange, specifically identifying abilities that make navigation more efficient in electronic information environments.

After a while, another American researcher, Gary Burnett (2000) enlarged the scope of the information neighbourhood concept from users to user communities – defining it as a virtual community where users are knowledgeable about the interest of community members, therefore in their browsing, they are capable of selecting and sharing relevant information that may be useful for community members.

Therefore the community operates as a sort of forum, connected by the information needs of users. Information neighbourhoods may aid in navigating information sets that grow larger and larger in the same way that real residential communities create their own representative and navigational interfaces.

It may be because of this similarity that although Burnett places the phenomenon specifically in virtual space, some researchers believe that in certain cases, information neighbourhood may also be interpreted as a real, physical act – where friends, family members, and colleagues become information neighbours. They use all this to shed light on that information exchange is always a piece of human behaviour, and technology is not necessary for it. They are doubtlessly correct in assuming this, at the same time, all this is only juggling with language and concepts. “Taking back” a concept made up specifically for the technical environment is not necessary to give names to the natural forms of information communication, built upon personal closeness. Communication science and anthropology

have been studying phenomena that belongs here for a long time, in depth, and whatever needs to be named already has a name.

EVALUATION AND RECOMMENDATION: We believe that information neighbourhood will fade quietly in the medium term, as it increases the number of descriptive terms unnecessarily.

References:

- Marchionini, G. (1995): *Information Seeking in Electronic Environments*. Cambridge, Cambridge University Press.
- Burnett, G. (2000): Information exchange in virtual communities: a typology. *Information Research* 4.
<http://informationr.net/ir/5-4/paper82.html> [2015-11-12]

Information nirvana

~ fast and unrestricted access to humanity's amassed knowledge in a way that permits working with it and performing operations on it.

Expressions used with the same, or very similar, meaning: world library, Corpus Digitale

Antonym(s): information dearth

Expressions from related concepts: information glut, information richness

Which category? An uniquely created word, one of the most original information metaphors. The phrase in the language system has not diffused, it is virtually unknown, as early occurrences were not followed by later ones.

Eugene Garfield (1925–), the patriarch-aged giant of information science, bibliometrics, and scientometrics, wrote a little essay at a rather early age, in 1953, as a library science student at Columbia University. In this, he thought about the libraries of the future, and dreamt up an institution that supports the high-intellect, scientifically knowledgeable, knowledge-thirsty population, the “Informatorium”, which does not only serve humanity that celebrates a new Renaissance in 2045 (the hundredth anniversary of the end of the World War), but lead it to the “information Nirvana”.

He later returned multiple times to both neologisms, however, this went unnoticed for a long time. After 2010, however, Garfield’s metaphor has been used in an explicitly business context, without referring to the original context – maybe related to the fact that the ‘Big Data’ revolution attempts to eliminate all obstacles from the way to the monumental concept that seemed illusory 50 years ago (McMahon, 2015).

Garfield’s information nirvana was openly influenced by H. G. Wells’ World Brain and Vannevar Bush’s Matrix concept, from before the time of the Internet. He knew that for every piece of information that has ever been written down or recorded to be accessible and downloadable anywhere, from everywhere, an incredible computing capacity, bandwidth, storage capacity, hardware and software requirements have to be available – at the proper cost. He often spoke up to say: no matter how much a new piece of technology seems like ‘salvation’, information nirvana is still a long way to go (Garfield, 1994).

EVALUATION AND RECOMMENDATION: No matter how respected and celebrated Eugene Garfield may be, we consider this conceptual innovation a failure. Partially as, without an explanation, it is easy to misunderstand, and partially, because the answer to the bombastic lexical attacks of moral panic is not to take up

the challenge. Furthermore, this opens us up to attack, with its utopistic feeling of salvation, while the primary message of the expression could also be presented with less intense associations.

References:

Eugene Garfield on the meaning of information nirvana:

<http://www.webofstories.com/play/eugene.garfield/76;jsessionid=6E2B762AC40CE493C631A870FF58297D> [2015-04-07]

Garfield, E. (1994): Of Multimedia CD-ROMs and Real-Time Access: „Information Nirvana” is still not on the horizon. *The Scientist*, November 14, 13.

<http://www.garfield.library.upenn.edu/commentaries/tsv08%2822%29p13y19941114.pdf>

McMahon, K. (2015): Creating a Gateway to Information Nirvana: Recap of Gartner. MDM Summit, London, SAP Blog, March 18.

<http://blogs.sap.com/analytics/2015/03/18/creating-a-gatewayto-information-nirvana-recap-of-gartner-mdm-summit-london/>

Information nomad

~ a person or group who consciously chooses life outside the mainstream of information culture, and alternative lifestyle, and a marginalised communication situation.

Expressions used with the same, or very similar, meaning: digital nomad, cyber hermit

Antonym(s): information junkie

Expressions from related concepts: information ludditism, information avoidance, information diet

Which category? An everyday term to describe a rare occurrence.

The phrase in the language system is very rare, much like the phenomenon it refers to.

As modernity and the big city lifestyle have their antitheses (a conscious choice of exodus or isolation), this may work the same way with digital culture and the network lifestyle. We can put ourselves on an information diet, or even leave behind the information environment that affects everyday life more and more partially or completely.

Naturally, there is life above the Internet and mobile phones, deprivation is typically only occasional: as we can spend a couple of weeks in a nomadic camp without water and basic amenities, not using basic infocommunications services and devices is typically only temporary. When the term first appeared around the millennium, the attitude that rejected computer word processing (and only trusted the world of books and the typewriter) was part of it. Later, it gained more and more interpretations.

Information nomads are the alternative artist groups and their digital projects who consciously accepted existence at the fringes of networks, half- and shadow publicity, in order to achieve a complete independence in the representation of the forms and messages they considered authentic. In the world of business information, the nomad is the representative of the behaviour that, to the analogy of the hunter-gatherer lifestyle that used natural resources, occasionally uses information commons, but with an – understandably – very low efficiency. (Compared to which, future-conscious, systemic information behaviour and its supporting services may be recommended.)

EVALUATION AND RECOMMENDATION: As exodus, the conscious choice of living in a marginalised network situation, rarely happens, the occurrence of this phrase is also very rare. Typically, it is talked about, recommended, but not done.

The primary reason for this is that a complete rejection of information culture is a romantic exaggeration. If persons or groups experience regular dysfunction, and the goblin of value loss appears, there are various tools to achieve a positive change before trying exodus. As long as this does not change, it is not likely that we would start using this phrase more often.

References:

Information nomads and community surfing (2008).

<http://hyperkino.net/layout/set/print/convergence-social-network-in-new-media/textarchive/FLOSS/Information-nomads-and-community-surfing>

Schönenberger, A. (2012): Information nomads & fast food. Smama, September 4.

http://www.smama.ch/wp-content/uploads/2012/10/120904_mBusiness_information_nomads_and_fast_food_e.pdf [2015-03-26]

O

Information obesity

~ a disorder stemming from irregularities of information metabolism that primarily makes it more difficult to process information and to turn it into useful knowledge.

Expressions used with the same, or very similar, meaning: information bulimia

Antonym(s): information diet

Expressions from related concepts: information asphyxiation

Which category? Heading from an insecure professional-public use towards a more grounded scientific use.

The phrase in the language system is virtually unknown.

The concept of information obesity had, for a long time, only been used by a number of publicists to depict the effects of information overload (mostly on individuals, and to a lesser extent, on communities), in a close relationship to it, as a mere stylistic choice. It is also considered a result of spam messages and the culture of torrenting, that, to paraphrase Rogers (2013), behaves a lot like bad cholesterol, making main arteries smaller and slowing down reactions. And due to the moral panic, information obesity attained an extensive scientific literary tradition (Poata – Zimmerman, 2013).

British critical social researcher Andrew Whitworth was the first one to take the phrase seriously, and to assign it a more exact field of meaning (Whitworth, 2009). His starting point was that as physical obesity is not solely caused by too much food, there must be further factors at play for information obesity. Along with quantity, the tools that information sector actors use to sell products to citizens who are, lacking the necessary skills, defenceless, are a bad information quality, an inadequate mental preparedness of the consumer, the lack of certain skills and knowledge, and the related pressure.

According to the various authors, the results of information obesity are the loss of creativity and flexibility, escaping to borrowing or plagiarizing other content instead of creating their own, and the passive reception of the media flow by various user groups (primarily employees and students). Others add an increased exposure to fake forms of consciousness (conspiracy theories, creationism, won-

der medicines and healers), and an increased dependency to centrally (state) controlled information.

There is no doubt that information obesity decreases the output performance related to information behaviour – this is why Whitworth recommends, as a sort of antidote, the creation of information literacy, then later, radical information literacy, at as young an age as possible, with the help of schools and libraries (Whitworth, 2014). Here, as his description is more accurate, than that of the always simplifying and sensational tabloid media, his solution is also logical and systemic – unlike those who want to make users participate in uninspired information diets (naturally, only using the tips and tricks that they sell or provide).

EVALUATION AND RECOMMENDATION: If Whitworth's interpretation diffused, the concept could enter everyday language along with scientific analyses. Naturally, this is what we stand for as opposed to use related to the old discourse on information overload.

References:

- Rogers, P. et al. (2013): Infobesity: The enemy of good decisions Insights
<http://www.bain.com/publications/articles/infobesity-the-enemy-of-good-decisions.aspx>
 [2015-03-26]
- Poiata, C. – Zimerman, R. (2013): Information obesity – Food for thought in the digital age
 Media Trends. https://www.academia.edu/3308911/Information_obesity_Food_for_thought_in_the_digital_age [2015-03-26]
- Whitworth, A. (2009): Information Obesity. Chandos.
- Whitworth, A. (2014): Radical information literacy: reclaiming the political heart of the IL movement. Oxford, Chandos.

Information ocean

~ the infinite, impenetrable mass of information.

Expressions used with the same, or very similar, meaning: infocean, information flood, sea of information

Expressions from related concepts: information deluge, information tidal wave, information explosion information overload

Which category? An everyday metaphor that is used in various professional texts, as well.

The phrase in the language system did not yet find the conventional and mutually accepted interpretation that would go beyond the ‘many’ interpretation, therefore, in its occasional uses, tiny differences in interpretation are always identified.

Compared to the image of rivers in information flow, information sea is even more, and information ocean means ‘more than anything, infinite amounts’. As ‘sea of’ had been used to express ‘a mass of’ in other linguistic situations, as well, it is clear that the job of ‘ocean’ is to boost it even more. Interestingly, the most cited study that uses the information ocean expression has appeared at the dawn of the Internet becoming a mass medium (Froomkin, 1996), far before the ‘flood’ caused by Big Data – but by now, there is nowhere to go to exaggerate further.

Information ocean is a very diverse, grateful metaphor. Along with infinity, it also reflects the impossibility of being travelled, as its majority always remains hidden. However, also that occasionally, for important information, we must undertake expeditions, and brave the open seas. We may also find the image of the ocean behind the two emblematic areas of the World Wide Web: the surface Web, easily reached by search engines, and the huge deep web, hard to explore and to navigate.

The verbs the various authors use categorises their approach to the image of the information ocean. Representatives of the danger discourses associate it with drowning, while those who associate it with swimming, sailing, or diving, probably consider it a capability or resource (and likely offer methods to swim successfully).

EVALUATION AND RECOMMENDATION: We recommend the short ‘infocean’ form without reservations (in contexts that match the real attributes of the ocean).

References:

Froomkin, A. M. (1996): Flood Control on the Information Ocean: Living With Anonymity, Digital Cash, and Distributed Databases. *Journal of Law and Commerce* 15 (395).
<http://osaka.law.miami.edu/~froomkin/articles/ocean.htm>

-
- Caleiro, D. (2013): Drowning In An Information Ocean Less Wrong. Blog, March 30.
http://lesswrong.com/lw/h3f/drowning_in_an_information_ocean/ [2015-03-26]
- Berti-Equille, L. et al (2009): Sailing the Information Ocean with Awareness of Currents: Discovery and Application of Source Dependence. CIDR Perspectives.
http://www-db.cs.wisc.edu/cidr/cidr2009/Paper_90.pdf

Information officer

~ a high-level company or government management position primarily for the strategic and operative planning and management of information technology tasks.

Expressions used with the same, or very similar, meaning: information technology head

Antonym(s): director of knowledge processes

Expressions from related concepts: information expert, information economy

Which category? A professional term with a stable meaning.

The phrase in the language system has long been present in the vocabularies of theoretical and practical experts both in management and in information technology.

The appearance of new forms of computers and electronic communication required an answer from megacorporations' information process experts. As the challenge came from the direction of the devices and technology that previously had no representation in the companies' leadership and work organisations, it became more and more important to have a specialised leader who controlled these processes.

The Chief Information Officer (CIO) role was identified in the early 80s by a former bank director and a former university economy professor (Synnott and Gruber, 1981), but it was, for a good while, also called Information Technology Director. CIO Magazine, the definitive periodical of the topic and the origin point of navigation was founded in the United States in 1987.

As the next step of informatisation, information officers appeared in government work and in militaries. And as more and more technological jumps came about, the fact that the name CIO covered two different roles became ever more clear: a high-level control of the device and application park of information technology is still important, but this is a task of a different nature that requires a different set of background knowledge than information processes (shaping and curating business intelligence, i.e. business information gathering, communication, and internal information flow). However, by this time, CIO was so well diffused that by now, re-positioning' the expression away from IT director is hopeless. Furthermore, around the turn of the century, the need for an even higher level of management integration occurred: nowadays, the Chief Knowledge Officer (CKO) is the head of training, human policy, and R&D, i.e. every issue that is related to the company's knowledge assets.

EVALUATION AND RECOMMENDATION: The expression, as we saw, would require its content to be revised, made more accurate, and modified, but its old meaning seems unchangeable. This stalemate could be solved if CIO kept its old meaning, and a new meaning that will be accepted by the professional community was found for leaders specialising in information processes.

References:

Synnott W. R. – Gruber W. H. (1981): Information Resource Management: Opportunities and Strategies for the 1980s. New York, Wiley-Interscience.
CIO Magazine homepage: <http://www.cio.com/> [2015-09-02]

Information omnivore

~ a user who consumes wildly varying classes of information through every possible channel passionately, consistently, consciously, and predictably.

Expressions used with the same, or very similar, meaning: information hoarder, information maven

Antonym(s): information avoider, philistine

Expressions from related concepts: information hunger, informavore, information obesity

Which category? A descriptive category definition with a strong emotional colour for a user type. It occasionally shows up in professional texts, although never as a term.

The phrase in the language system is barely present, it is finding its place.

The expression was born in the 1997 Pew Internet and American Life Project survey. As the number of Internet habitats was negligible at the time of the survey, the main information sources of people characterised as information omnivores were books and various media: TV, magazines, and the radio. In the time since then, this state changed, turned around: books and traditional media have been forced to the background by the Internet.

Information omnivores are open to any information, and they feel at home in the diverging world of information. They follow changes in technology, science, politics, society, culture, and other important areas, and they possess profound knowledge and strong opinions on these. Their statements are supported by number and other data. They are very demanding information consumers with serious expectations and explicit opinions. These providers generally do not see them as a threat, but partially as a market, and partially a professional ally, a kind of test subject, whose behaviour can foretell others'. According to their wide-ranging knowledge, they are considered the best feedback regarding any services or products. Also, they often aid journalism, politics, or science in the creation and spreading of a new concept.

Although their activity often forms a bridge between two or more isolated areas, many view them negatively, and think of them in a demeaning way, considering their hard-to-tame interest useless.

EVALUATION AND RECOMMENDATION: An apt term for naming an important participant of the information ecosystem. Against the pejorative use, the valuable

sides of information omnivores should be emphasized, illustrated, and its positive associations should be strengthened in everyday interpretation.

References:

Zickuhr, K. et al. (2014): From Distant Admirers to Library Lovers: A typology of public library engagement in America. Pew Research Center.
<http://www.pewinternet.org/files/2014/03/PIPLibrary-Typology-Report.pdf> [2015-09-22]

Information operation

~ active military activity aimed at attaining and maintaining information superiority.

Antonym(s): physical operation

Expressions from related concepts: information warfare

Which category? Military science and military practice-professional.

The phrase in the language system only exists in military subcultures.

The concept was born and had diffused before the millennium, it was first used by the United States military leadership. In a large majority of cases, it is used together with the phrases ‘information warfare’ and ‘information superiority’.

Its goal is to influence enemy information and information systems, while also defending their own information and information systems. In other words, executors of information operations attempt to influence the enemy’s information environment to limit all their information-related abilities, and in parallel, to optimise the use of their own information abilities.

Its four most known examples are supporting, defensive, offensive, and opinion-leading information operations. In support operations, the goal is the satisfaction of one’s own information needs: in defence, protecting one’s own information systems from adverse outside influences, and in offence, hurting or destroying the enemy’s systems, in opinion-forming, a positive influence on the military operations by non directly partaking actors in the environment.

EVALUATION AND RECOMMENDATION: Military vocabularies, in which ‘operations’, without an adjective, have long been used, took in ‘information operations’ easily. The feel of the word outside the military subculture is strange, therefore it is not expected to diffuse in other areas.

References:

Jessop, B. (2007): Information Operation Roadmap

https://www.bibliotecapleyades.net/socio_politica/sociopol_globalmilitarism06.htm

Ahrarui, E.M. et al. (2000): Information Operations: The Hard Reality of Soft Power

<http://www.iwar.org.uk/iwar/resources/jiopc/io-textbook.pdf>

Information overload

~ a dissonant, unhealthy growth of the total mass of information. As the methods of overviewing, searching, managing, and using information develop slower than the amount of available information, processing problems caused by excessive information productions endanger basic system functions, and may even pose a threat to the health of the overloaded persons.

Expressions used with the same, or very similar, meaning: information flood, information obesity, information pollution, information anxiety, information asphyxiation

Antonym(s): information underload, information avoidance, information diet

Expressions from related concepts: information jungle, information ecosystem, information environment

Which category? Born as a professional-public term, it became a quasi-term in various social science fields without the appropriate critique.

The phrase in the language system is incredibly popular, from strict social science literature to school textbooks to the press – even though it is more of a moral panic phenomenon.

According to the most popular network sites, the expression that has many different translations was created by American political scientist and organisational researcher Bertram M. Gross in the early 60s (Gross, 1964), while in fact, it was first used in a trailblazing book by urban designer and system researcher Richard L. Meier (1920–2007; Meier, 1962). (And even before Meier, many used very similar expressions or described the phenomenon without naming it. The literature goes back to 1948: the Scientific Information Conference organised by the British Royal Society examined the overload and fears caused by the huge amount of potentially relevant scientific information sources.)

In the end, it was Alvin Toffler's book *Future Shock* (Toffler, 1970) that made the expression known worldwide and ignited emotions by the message of danger connected to the concept. And as the librarian profession faced the exponential growth of published written material and that it is harder and harder to face processing, storing, and managing data sets at the same time, it immediately took the phrase as a term, and is still using it in a determined way, connecting it to the astonishing rate of growth of digital content that can be expressed in bytes.

The sizeable literature generally emphasizes the following causes and reasons of information overload:

- the faster and faster appearance of new pieces of information, their exponential growth, the effect of which is multiplied by the easy multiplication and transfer of information,
- the increase of the number of direct access information channels, the issues of processing available information (primarily because of the controversies and inaccuracies)
- the lack of methods for information comparison and processing
- the psychic pressure created because of the above

However, the discourse of information overload has many issues and basic conceptual problems. It is, in fact a modern myth: a fake belief sanctified by tradition that seems emotionally grounded, a symbolic product of how people experience the powerful periods and innovation of history. Every crisis brings forth new myths, both positive and negative. Information overload is a negative myth, fed by existing negative effects, that appears in connection with the concept of the 'information age'. And while the discourse is full of false and not-thought-through ideas, it exists and diffuses without any convincing proof, and it is a deeply experienced, strong answer to critical social situations.

Tonya Tidline proved that the problem of information overload primarily shows up in the everyday work of people who work directly with information, but they find the overload and find solutions (Tidline, 1999). In the meanwhile, the myth speaks in a generalised way, it expands the range of 'danger' to "every person or user", and foretells oncoming cultural catastrophes almost hysterically, consequently mixing up the question of quantity with issues of quality. This is why critics of modernism who misunderstand the nature of information and the functioning of information culture completely arrive at statements such as current information culture is like AIDS (Postman, 1990) and leads to destruction.

And although the expression, as we saw, was only born in the sixties, the phenomenon itself, the myth of the mass of information that grew to an unmanageable size accompanies the entirety of social history, from archaic ages to today. The alarm is raised again and again that there is too much information, but the ones raising it are typically the ones who have the biggest role in multiplying information.

Science history calls all this the Barnaby-Rich syndrome (Braun et al., 1996), but this does not stop not only journalists and politicians, but numerous scientific researchers to consider information overload an axiom. As an example, Xerox and other companies formed the Information Overload Research Group (IORG) in 2008.

EVALUATION AND RECOMMENDATION: The myth and the concept that became especially popular will doubtlessly influence various discourses for decades to come. Among which circumstances and on what subject can information overload

be relevant? As soon as we can identify the situations, the ‘microverses’ when the entering information flow or its complexity truly exceeds the processing capacity of the given system. Used only in this narrow sense, the expression would have validity. There is not much of a chance for this, therefore we have to learn to live with the modern myth that every single use of the expression recalls.

References:

- Gross, B. M. (1964): *The Managing of Organizations*. New York, Free Press, 857.
Meier, R. L. (1962): *A Communications Theory of Urban Growth*. M.I.T. Press, 132.
Toffler, A. (1970): *Future Shock*. Random House
Tidline, T. J. (1999): The Mythology of Information Overload. *Library Trends* 47, 485–506.
Postman, N. (1990): *Informing Ourselves to Death*
https://w2.eff.org/Net_culture/Criticisms/informingourselves_to_death.paper [2015-02-26]

P

Paninformationalism

~ an approach that considers the phenomenon of information the most basic not only in the mental, but in the physical world, as well, and deducts every important connection and relationship from information itself.

Expressions used with the same, or very similar, meaning: information realism, info-computationism, information ontology

Expressions from related concepts: pansemioticism, pancomputationalism (schools that explain everything with signs or computing power), digital philosophy

Which category? Technical term.

The phrase in the language system is used very rarely, solely in academic circles.

After a while, physicists joined the humanities and biological-genetical theories of information, as they added information to the basic principles (space, time, matter, energy). From the mid-80s, the viewpoint of those who put information in front of all physical principles, and started to discuss digital physics, then digital philosophy. One of their best-known representatives is computer-science pioneer Edward Fredkin (b: 1934), who saw the most basic unit of information, the bit behind the world of atoms, electrons, and quarks, and the reflection of the same simple law as a program in their operation – and the operation of the entire universe. Information that is continuously transformed with ceaseless repetition, achieving a greater and greater complexity, and multiplying its transformative power at the same time. According to Fredkin, this is how information becomes the cause and prime mover of everything.

It is no accident that this approach got quite close to pancomputationalism, which describes the universe in the analogy of computer signal processing, using the same principle for the operation of the material, the living, and the mental worlds (the mind).

EVALUATION AND RECOMMENDATION: The expression reflects the carried meaning well, but it is cumbersome and complicated; it is one of the least used versions in

the network of very close, similar natured (and similarly complicated) expressions. We believe that a simpler, shorter, clearer version will emerge from these terms – but only if the acceptance and fame of the theory behind it will also increase.

References:

Fredkin, E. (1992): Finite Nature. Proceedings of the XXVIIth Rencontre de Moriond.

Information panopticon

~ a social space that embodies a centralised power, where the behaviour of the single person may be monitored and controlled using information technology methods.

Expressions used with the same, or very similar, meaning: monitoring, control

Antonym(s): information agora

Expressions from related concepts: information prison

Which category? A successfully introduced and diffused social science term.

The phrase in the language system suddenly became very fashionable, then, step by step, lost its explanatory power.

In the late 18th century, British philosopher and sociologist Jeremy Bentham designed the ‘ideal’ prison, one that offered more control than any previous one over the inmates. In the middle of the circular building is a guard tower that offers a view into every cell, but prisoners cannot contact and communicate with each other. They never know if they are being monitored at the given moment, only that, theoretically, they may be monitored 24/7.

From Bentham’s building plans, French historian-philosopher Michel Foucault created an allegory that symbolises the relationships of modernity, power, and knowledge, that had such an effect on late 20th century social scientists that similar approaches organised themselves into a comprehensive school under the name of ‘panopticism’. Harvard University professor Shoshana Zuboff attempted to continue this tradition when she created the term ‘information panopticon’ in the late 80s, dedicating an entire chapter to the issue. Zuboff primarily intended to draw attention to the negative workplace effects that occur when fast technological development encounters distrustful employers. Her aim was to prove that the information panopticon may also have a dual nature – being monitored may go along with monitoring others, or even those who watch the person. A post-bureaucratic organisation may supply its employees with abundant information, and monitor them at the same time. Such an organisational culture is certainly much more efficient and effective than one building on the anachronistic, Bentham-like world of control and monitoring.

Zuboff’s excellent book has inspired a large amount of followers, but the information panopticon started to mean less the company community, and more the entirety of society. After all, the possibility of being observed, controlled, and followed is true for everyone through the digital footprint built while using computers, mobile phones, cars, and social media sites. So is duality: these same devices can make the watchers into the watched.

EVALUATION AND RECOMMENDATION: The questions of observing, following, and controlling became very complex. Workplace monitoring and CCTV monitoring in public spaces and public buildings are, by now, legally regulated categories, and there are fierce debates regarding digital surveillance. However, in these, the concept of the ‘information panopticon’ is barely used. It will slowly fade to be a historical addendum, as in current debates, current science turns to other expressions.

References:

- Foucault, M. (1975): *Surveiller et punir: Naissance de la prison* Gallimard
- Zuboff, S. (1988): *In the age of the smart machine: The future of Work and Power*. Basic Books, 315–361.
<http://www.shoshanazuboff.com/books/in-the-age-of-the-smart-machine/> [2015-09-28]
- Berner, M. et. al (2014): The information panopticon in the big data era. *Journal of Organization Design* 1.
<http://www.jorgdesign.net/article/view/9736> [2015-09-28]

Information Park

~ an industrial park with a contagious, sophisticated development zone with water access and a lot of green parks, which offers concentrated office allocations to the companies and other institutional actors of the information and knowledge sector, with an especially high quality information infrastructure.

Expressions used with the same, or very similar, meaning: IT incubator house
Which category? An expression used as the collective name of few existing institutions. It originated in a professional environment, but its everyday use is also popular, both as a common and a proper noun.

The phrase in the language system has not diffused yet, and is typically used to refer not to an actual park, but to the 'genre'.

In the mid-90s, IT, telecommunications, content provider and consultancy actors grew so populous that serious competition started on the office building market. Most companies that had started to grow recognised that only the biggest and strongest companies could afford to build an expensive headquarters and binding their resources in it, yet on the other hand, receiving customers in an exclusive environment even in the earliest phases of growth may be beneficial.

All this was also connected to the cult of the Silicon Valley. It is well known that knowledge-intensive sectors have a huge need for concentration: it is good if companies (and their capacities) are close to universities and research and development centres, hoping for an atmosphere of innovation.

Information parks, specialising in supplying exactly these companies, have been coming to life en masse in the last two decades in Asia, West Europe, and the United States, at the initiative of the state, universities, business property developers, and large IT companies (who often offer small start-ups discounted growth opportunities, i.e. incubation, so that they would receive part of their revenue).

EVALUATION AND RECOMMENDATION: As the number of information parks will hardly grow in the next period, and if it will, the new ones will choose a different name, this umbrella term will have less and less reason for existence. We expect the term to die out slowly, as new spatial solutions that realise new types of concentrations will likely choose new names for themselves.

References:

<http://www.businessdictionary.com/definition/information-park.html#ixzz3WjfDf0LZ> [2015-03-26]

Information partnership

~ an alliance between multiple actors (generally companies) with the goal of creating new information, and exchanging and sharing information.

Expressions used with the same, or very similar, meaning: information sharing

Antonym(s): encryption, secret

Expressions from related concepts: information games, information monopoly

Which category? An experiment to create a descriptive term that names a new phenomenon.

The phrase in the language system did not manage to diffuse, but as it refers to an important relationship, there is a chance it will be 'picked up'.

Konsynski and McFarlan wrote a comprehensive publication in the early 90s, that drew attention to a phenomenon previously not very well diffused in the private sphere. According to the traditional view, in a highly competitive market, one of the keys of success is whether a company can turn its own highly guarded information into an advantage. The American authors, breaking away from established schemata, made the argument that rival companies, instead of closing down information (from simple rows of data to high-level skills and expertise), should strive to share them in order to reinforce their market positions.

Many reasons may drive actors to cooperation. For example, the high cost of creating new knowledge, strengthening trust, demonstrating existing competences, and as such, obtaining new commissions. Information cooperation is, accordingly, mostly important for enterprises for reasons of cost efficiency; for small and medium enterprises, it is important for the unification of the necessary resources. Actors may simplify their communication platforms and save training costs. All this can be done not only to prevent market loss, but also as an extraordinarily efficient tool in competition if it is used deliberately and professionally.

Information sharing changes a number of things in the traditional value chain of information and in the strategic alliance space between information-intensive companies.

The path of information partnership may be taken not only by actors with the same or similar profiles, but, for example, suppliers and distributors may also do so.

The healthcare and the pharmaceutical industries are considered especially cooperation-sensitive areas, along with, the world of the smart city (Robinson, 2013); as for types of information, the uncovering and handling of cyber security and the fresh results of technological areas.

EVALUATION AND RECOMMENDATION: The expression is hard to translate to a number of languages, but it is easy to evoke and circumscribe. The English version is more ingenious, and as it refers to an exciting phenomenon that is going up in value, it is looking forward to a great future.

References:

- Konsynski, B. R. – McFarlan, F. W. (1990): Information partnership: Shared data, shared scale. Harward Business Review. Online:
<https://hbr.org/1990/09/information-partnerships-shareddata-shared-scale> [2016-05-16]
- Robinson, R. (2013): A design pattern for a Smarter City: the City Information Partnership. The Urban technologist, Febrúar 19.
<https://theurbantechnologist.com/2013/02/19/a-design-patternfor-digital-urbanism-the-city-information-partnership/>

Information patchwork

1. ~ a creative expression that describes the low efficiency information management culture of large organisations. Among the independently built and handled information stocks of employees, there is no connection or pathways, therefore the organisation, these are only available as random “patches”.

Expressions used with the same, or very similar, meaning: information fragmentation

Antonym(s): information community, information group

Which category? An attempt at conceptual innovation, to create a new term of information and knowledge management.

The phrase in the language system is unknown, it is not even diffused in its own field.

2. ~ a statistical technique of digital steganography that can be used to hide coded information in a picture by using repeating patterns.

Expressions used with the same, or very similar, meaning: patchwork algorithm, digital watermark

Expressions from related concepts: –

Which category? A cryptological term.

The phrase in the language system is present only in the world of those working in encryption, and even there, its use is unsteady.

Patchwork is an ancient artisan technique used from Ancient Egypt to Mongolia to Native Americans in innumerable forms in the creation of one- or multi-layer blankets, rugs, and coats. Its basis is sewing patches and pieces together, then expanding them, with a mosaic-like fitting of the pieces, that can either be regular or irregular in its shape.

This is the characteristic that let two distant areas of information culture discover it: it may be used in a very expressive way to shed light on a phenomenon, or to name an unique technique.

1. In their book on business information management, Davis et al. (2006) use the example of a state agency to demonstrate how an organisation’s information culture may resemble patchwork sewing:

- workers collect their material separately („everyone for themselves” culture)

- efficiency is a result of personal aptitude and smartness, it does not stem from the quality of the organisation's operations
- there is no view on the experiences of those who work at other points of the organisation
- there is no oversight over the client's affairs handled at other companies
- data collection (going back in time) and archiving (for later use) happen completely ad hoc. Consequently, there is no shared knowledge base, certain pieces of information must be acquired again and again.

Information patchwork is present in the recent healthcare literacy literature with a very similar view and meaning (Maryalice, 2011). The source of the problem here is that without user-controlled illness databases, the huge mass of partial information has lots of carriers that are not in touch with each other, and that users do not know about. Thus walls are built not only between the blocks of information, but their potential carriers, as well. This information fragmentation may then indeed drive a wedge between various actors (doctors and pharmaceutical specialists, theoretical and clinical experts, or even the family and the sick family member).

2. A young trio of Indian authors (Rana et al., 2012) summed up information patchwork used as an encryption technique where a pattern hidden in a digital image carries the coded message in a nutshell:

Digital image, as a carrier, is very resistant to signal degradation (it may even be rotated, parts may be lost), therefore it is a very stable carrier of the original message. Furthermore, it is almost invisible, as people who do not know that the picture contains hidden information do not go looking for it. Its only drawback is that only very few pieces of information can be coded with this method – by increasing the number of images, however, lots of benefits are lost, and risk increases.

EVALUATION AND RECOMMENDATION: Meaning 1 is disappearing in the world of more and more professional organisational information management techniques, as it refers to a state of organisation culture that is exceeded at more and more places. We believe the use of meaning 2 will decrease as it is too long in this form, and many simply call the technique 'patchwork' by now.

References:

- Davis, J. – Miller, G. J. – Russell, A. (2006): *Information Revolution: Using the Information Evolution Model to Grow Your Business*. John Wiley & Sons, 82.
- Maryalice, J. (2011): *Health Technology Literacy: A Transdisciplinary Framework for Consumer-Oriented Practice*. Jones & Bartlett Learning, 168.
- Singh, R. M. et al. (2012): *Art of Hiding: An Introduction to Steganography*. *International Journal Of Engineering And Computer Science* 1 (1), 11–22.

Information pathologies

~ various types of insufficient functioning of the (company) organisation as an organism caused by disorganised information processes.

Expressions used with the same, or very similar, meaning: information dysfunction

Antonym(s): well-working information processes, information Nirvana

Expressions from related concepts: information fragmentation, lack of information, imperfect information, information obesity, info-stress, infophobia, information anxiety, information overload, information asphyxiation, information diarrhoea, information logistics, information management

Which category? An conceptually erroneous everyday collective term that aggressively tries to replace an organisation- and leadership science term.

The phrase in the language system is, unfortunately, not spreading in its original, clear, professional meaning, but in its untenable secondary and tertiary meanings.

The concept of information pathologies was born in the organisation theory in the mid-60s (Wilensky, 1967) as a metaphor, so that the obstacles that hinder healthy information operations of an organisation are easier to understand.

In the approach of Scholl (1999), these are avoidable failures of parallel information processing, caused by insufficient availability, forwarding, or utilisation of the information needed to make decisions. Bawden and Robinson (2009) used it for the Internet (moreover: the Web), emphasizing that new technologies always result in new pathologies. The vulnerability of systems, and the inefficiency, low value, or misleading nature of information is a growing issue. Organisation theory literature had, by now, made organisation information pathologies an organising area of knowledge. Scheel (2016) identified five types of diseases that may be traced back to disturbances in the organisational culture of knowledge, and five others that may be explicitly traced back to organisational deficits.

Unfortunately, the appearance of the emotionally powerful ‘pathology’ in the phrase makes many authors use it in a ‘clinical, medical’ sense, as opposed to the organisational metaphor that was originally meant only as a useful idea; using it to refer to users exposed to the harms of information civilization. Therefore continuous partial attention, Attention Deficit Disorder, information stress, library technostress, or agitation and impatience that result from too many mental stimuli may all enter the list of information pathologies – without distancing it clearly from the original, organisational meaning of the phrase. Naturally, we may and should deal with these phenomena, both in labour psychology and a more general, cognitive psychological sense, but bringing them together with a non-existent and

confusing category, as information pathologies, is unnecessary. Moreover, including these existing, real behavioural disorders into the scope of the concept opens the doors to talking about “symptoms” that should definitely not be considered pathologies, as they themselves were born as the sole goal of being metaphors: information obesity, information bulimia, a phobia-like avoidance of information, information-caused anxiety, or information diarrhoea as information pathologies.

However, ones that are actual diseases (on-line game addiction, cyber addiction) are not information-related, but psychosocial in nature. There is no disorder caused by information, continuous information awareness is a basic way of living: disorders are only caused by the lack of information or by sensory deprivation.

EVALUATION AND RECOMMENDATION: When one talks and thinks about pathologies, Hippocrates’s pathos (suffering) enters the interpretation, even though its opposite, ponos (the ability and fight the body uses to recover balance and health) is just as important. The original meaning of information pathologies had still contained this moment, but later uses led to confusion, and strengthened the moral panic phenomena, by linking the image of disease to the harms of information civilization. It is easy to see that all this is “created, at least partially, by overzealous information experts, so that there are problems to solve”, yet maintaining an adequate interpretation and excluding the unnecessary uses that make misunderstandings easier is difficult. Only a consequent and tough advocacy activity can help with this.

References:

- Wilensky, H. L. (1967): *Organizational Intelligence: Knowledge and Policy in Government and Industry*. New York, Basic Books.
- Scholl, W. (1999): Restrictive Control and Information Pathologies in Organizations. *Journal of Social* 55 (1), 101–118.
- Scheel, T. E. et al. (2015): The Role of Multilevel Psychological Contracts for Information Pathologies in PSFs’ Knowledge Cycle. *Academy of Management Proceedings*, January. <http://proceedings.aom.org/content/2015/1/15986.short> [2016-05-18]
- Bawden, D. – Robinson, L. (2009): The dark side of information: overload, anxiety and other paradoxes and pathologies. *Journal of Information Science* 35 (2), 180–191. <https://pdfs.semanticscholar.org/990b/9507235e045bcefe808c873c37758fe42e08.pdf>

Information pedagogy

~ the combination of organised areas of knowledge created in the multi-level encounter of education and the information challenge, the theoretical research and practical realisation of the results of which are happening in parallel.

Expressions used with the same, or very similar, meaning: digital pedagogy, cybernetic pedagogy

Expressions from related concepts: information literacy, innovative pedagogy

Which category? A piece of conceptual innovation that attempts to describe three clearly separate directions of the development of information that, because of their relationship to information, belong together to a certain extent, with one expression.

The phrase in the language system has not diffused, even education science itself uses it as an umbrella category rarely.

In the 90s, it was already clear that the world of education and studying would face serious challenges because of the oncoming information revolution. That was when the term information pedagogy first appeared, sparingly, advancing the future direction that would possibly open a new direction inside the science of pedagogy.

After this, however, the three areas started to develop at such a fast pace that all three developed their own literature and set of concepts. There are numerous rival expressions for the name of the practice of teaching and learning modified by information and communication tools (ICT), and these are still popular (in English: ICT-enabled pedagogy, ICT for education, ICT enhanced teaching and learning, mostly: ICT in education, electronic study environments). The new culture of acquiring and sharing information requires teachers to make an effort, in order to bring the practice of education closer to the information environment that students are used to (therefore some see it fit to cover an even tighter set with its own term – this is how information sharing pedagogy was born, which basically means studying in a social media environment – Rambe and Ngambi, 2006).

In parallel, shaping information-related knowledge, skills, sensitivities, and consciousnesses into educational packages had developed in parallel – with the development of earlier IT teaching practices – as well as the introduction of information culture in pedagogy practice. This is best expressed by the “education of information literacy” formula, in a partially school subject, partially skills and competence development framework. The third approach analyses the entire education system and its control and institutional practices and defining structural

elements from the viewpoint of how much the practices of school and education, developed in the industrial age, fit the requirements of the information society, and how they can be made appropriate to teach and educate the generation of digital natives. This is the search for the “pedagogy of the information society”.

EVALUATION AND RECOMMENDATION: Although information pedagogy still exists as a category at German universities, the umbrella term cannot diffuse, as the separate use of the three elements is strong. On the long term, we believe that the thematic vicinity makes shared handling more and more justified, therefore an increase in the use of the term is expected.

References:

Rambe, P. – Ngambi, D. (2011). Towards an information sharing pedagogy: a case of using facebook in a large first year class. *Informing Science: the International Journal of an Emerging Transdiscipline* 14, 61.

Perfect information

~ the concept, imported from game theory into economic science refers to the situation in which parties (players, producers and consumers, and market rivals) possess the same information regarding the same thing.

Expressions used with the same, or very similar, meaning: transparency

Antonym(s): imperfect information

Expressions from related concepts: information asymmetry, information games, information allowance, information benefit

Which category? A term of information economy, embedded in game theory.

The phrase in the language system is used solely in economic theory literature.

In chess, players always see the figures (their own and those of their opponents) and every step. Therefore they can make decisions in possession of the same pieces of information (unlike poker, where the cards remain hidden from opponents until the end of the game).

When one party has more information than the other, an imbalance may form, that economic theory calls information asymmetry.

As this can have a negative effect on the operation of the market, the existence of a perfect information situation is indispensable for the presence of a perfect competition. Theoretically, in a state of perfect information and the other basic requirements of the competitive market, consumers will be empowered to make the best decisions and purchase the goods and services that fit them the best. And while even the measurement of perfect information has an established methodology (EVPI – Expected Value of Perfect Information), a number of economic and sociological schools go as far as to question the possibility of the perfect market and the perfect information situation.

Their start point is that differences in information bases are necessary, there are unavoidable differences in the rhythms of gaining information as the processes of production, distribution, and consumption do not happen at the same time and there are insider situations, and decision-making insecurity will never be eradicated. However, perfection refers to the situation, and not the information. The question is not whether all information can be acquired, only the requirement of the parties having the same pieces of information has to be fulfilled. And there are approaches, according to which only the mutual nature of information regarding the decisions of the other party are important, and not all pieces of information relevant to the decision – this is why some differentiate between perfect and complete information.

EVALUATION AND RECOMMENDATION: The term is a part of a family of coherent and stable technical terms, its load may stay more or less unchanged in the next years. However, contradictions that cannot be eradicated from the conceptual system because of the sterile and regulated nature of games, and the complex and diverse one of work may sooner or later lead to more accurate models with greater explanatory power (and the associated new terms).

References:

Osborne, M. J. – Rubinstein, A. (1994): Extensive Games with Perfect Information Chapter 6. In: A Course in Game Theory. Cambridge M.A.: The MIT Press.

Information philosophy

~ an area of research that handles conceptual issues that emerge in the intersection of philosophy, IT, computer science, and information technology.

Expressions used with the same, or very similar, meaning: the universal theory of information

Expressions from related concepts: information science, information theory, information-centred world-view

Which category? The name of a new scientific field.

The phrase in the language system it became a very popular and often referenced term, mostly due to the fact that the theory behind it opens up lots of areas for debate, therefore the literature of the question is mostly a literature of debate.

Philosopher and information scientist Luciano Floridi, who became a star author and lecturer (partially without merit) has been advocating that a development of the conceptual framework is needed to clear up issues on the borders of information and its frontiers since the mid-1990s. This is why he created the phrase ‘information philosophy’ (Floridi, 2002).

The classic topics of philosophy, such as spirit, mind, experience, arguments, knowledge, truth, morals, and creativity are drawn more and more into the foreground when we consider certain issues in IT, may those be related to intelligent mobile technology, various software agents, or computers and artificial intelligence. Floridi believes that information philosophy may be interpreted as an innovative extension of the old tradition in the modern world. (However, this way, various philosophical traditions – such as the Chinese (Ligian and Brier, 2015) – lead to various information philosophies).

Computer modelling makes us ask newer and newer questions, to be answered by the various fields of logic, epistemology, and philosophy. In other words: as philosophy and logics were once considered the shared base of every scientific field, nowadays information-related fields are taking over this role, therefore the hybridisation of the two may be a way forward, and it may be ready to become a discipline on its own.

However, there is a difference between information philosophy and the philosophy of information. Former astrophysicist Bob Doyle, who calls himself an information philosopher these days, and collects the relevant old and new pieces of the literary tradition that may belong here, differentiates this way: The philosophy of information (much like science philosophy, mathematical philosophy, or language philosophy) is the result of utilising the philosophical apparatus to

gain a deeper understanding of the discipline in question. Information philosophy, on the other hand, is the road that offers a new answer to the classic base questions of philosophy by replacing the earlier language with the one feeding from a deep knowledge regarding the phenomena of information, and thus leads to new answers.

EVALUATION AND RECOMMENDATION: Doyle's approach has an important role. Information and philosophy may meet in two ways, and if we intend to be accurate, we can only use the term 'information philosophy' for one of them. However, as the entire area is still forming, connections between the two approaches are more populous than the factors that separate them. There is, however, no doubt that an expansion of the information philosophy discourse is expected in strong debate.

References:

- Floridi, L. (2002): What is Philosophy of Information. *Metaphilosophy* 33 (1/2).
Ligian, Z. – Brier, S. (2015): The Metaphysics of Chinese Information Philosophy: A Critical Analysis of Wu Kun's Philosophy of Information. *Cybernetics & Human Knowing* 22 (1), 35–56.
Bob Doyle's The Information Philosopher Page
<http://www.informationphilosopher.com/about/> [2016-05-20]

Information physics

~ the encounter of physics and information theory: a new direction of physics and quantum mechanics deducing the understanding of the physical world from information.

Expressions used with the same, or very similar, meaning: information world-view in physics

Expressions from related concepts: the universal theory of information, information theory

Which category? The still-uncertain name for a school of thought that demands its own place in the taxonomy of science.

The phrase in the language system sounds strange for those who have a hard time suddenly seeing the basically ‘non-material’ information as a physical principle.

A number of physicists in the 1990s claimed more and more clearly that in current theories on the physical world, information should play a much bigger role, and there is an even greater chance that the strengthening of the information point of view may even lead to the birth of new physical theories (Goyal, 2012).

As a ‘minimal programme’, this meant that the classic principles of the material world (space, time, matter, energy) are joined by information, as part of the physical reality outside the brain, and later, theories that claimed that of all the principles, information is the one that the others may be organised around, the one on which can be used as the basis of an entire physical theory, emerged. It is important to note that there are considerable differences between the various information physics theories in the details, the definitions of the origin points, and the deductions. Various approaches may be considered information physics do not see themselves as such, but are structurally part of it; at the same time, pseudo-scientific approaches drift into it that are only juggling various related concepts in search of legitimization. (Especially since the information view has gained a foothold in quantum physics, that is sensitive to the position of the observer). Therefore it is hard to sum up the basic tenets of information physics in a couple of sentences in a way that is true for every theory.

One of the common origin points is that the states of matter and energy carry information: order has information content, and the experienced components of the physical world carry information regarding their structure, creation, and operation. Therefore, whatever happens in nature is information processing, regardless of the observer.

Information physicists searching for traditions occasionally jump back to the late 1920s, when Leó Szilárd proved the equivalence of information and (physical) entropy, in other cases, they use the late 19th century works of Ernst Mach as theoretical predecessors. Leó Szilárd's base unit, bit becomes quantum bit (qubit), creating the basis of quantum computer science. Interestingly, in one the interpretations of information physics, the concept of probability expresses the measure of how informed the present is regarding future physical events, and thus, it arrives exactly where researchers of the information behaviour of living systems do, who find the ability of properly mirroring the future to be the point of the nature of information.

EVALUATION AND RECOMMENDATION: Information physics is a natural sciences field that is still developing, with a strong multidisciplinary background. Both the theories and the conceptual origin points carry strong uncertainties in them, and this will change only if the theory becomes part of the physics mainstream from its status as an alternative theory.

References:

- Goyal, P. (2012): Information Physics – Towards a New Conception of Physical Reality *Information* 3:567–594.
- Vedral, V. (2012): *Decoding Reality: The Universe as Quantum Information*. Oxford University Press.

Information pluralism

~ the parallel existence, access, and consumption of information content without a community-determined difference in value between its types and classes, or choosing members to be advantaged based on any viewpoint.

Expressions used with the same, or very similar, meaning: information diversity

Antonym(s): information dictatorship, information monarchy

Expressions from related concepts: information sharing, open data, open information, open access, information glut, information inequality

Which category? An expression used in multiple, partially similar worlds of problems – primarily science, but is also filtered through into the political public discourse.

The phrase in the language system is not part of public discourse, as it is too cumbersome, and its use in scientific discourses is very rare.

The issues related to the pluralism of media have been, for decades, a focus point of debates on the structure of publicity, and the relationship of citizen and power. Its lack always recalls the danger of one-sided information, its existence is a sort of democratic guarantee. As digital culture grows and media convergence (the various forms of media growing closer to each other) give way to the Internet as a universal medium where all channels meet and from which all end devices can gain content from, media pluralism gave way to information pluralism in the dictionary. In the various reaches of the on-line world, numerous aspects of this pluralism are being studied, from the pluralism of search engines to the question of controlling the content of social sites.

From the mid-eighties, a leading figure of ethics-based economy, Amartya Sen (1933–) has been using the term in a meaning only slightly similar to the above. He uses it to refer to the fact that if abilities are required for the proper functioning, and the source (vector, variable) of these abilities is information-natured, then access to vectors (pieces of information) that empower others must be plural in order for a society to be just.

In the above approach, it refers to the pluralism of pieces of information themselves. On the other hand, Erkki Patokorppi from Finland uses the expression to refer to theories on information. As the theories of information may be divided into two main groups (cybernetic and semiotic-pragmatic), and further sub-groups, and it is impossible and not worth to differentiate among these based on reasons of correctness of incorrectness, Patokorppi built an approach that accepts

the unquestionable legitimacy of these as an origin point, and calls this information pluralism (as an abbreviation of “information theory pluralism”).

EVALUATION AND RECOMMENDATION: Information pluralism suggest the strictness of a technical term, but as it often dissolves into the “pluralism of information” form suggests that the content to be expressed might not require a fixed phrase. Its fate is uncertain.

References:

- Sen, A. K. (1985): Well-Being, Agency and Freedom: The Dewey Lectures. *The Journal of Philosophy* 4, 169–221.
- Patokorppi, E. (2011): Information Pluralism and Some Informative Modes of Ignorance. *Information* 1, 41–60.

Information poisoning

1. ~ information technology with its dubious social use and the Internet that, because of its lack of regulation, carries lots of harmful information stop information from becoming knowledge.

Expressions used with the same, or very similar, meaning: information mess, information pollution

Antonym(s): information utilisation, information processing

Expressions from related concepts: information filtering, information blindness

Which category? A failed attempt to give an everyday interpretation a name.

The phrase in the language system is overshadowed by recent interpretations.

2. ~ the negative effect that is a consequence of consuming too much information, manifesting in a decaying decision-making ability.

Expressions used with the same, or very similar, meaning: infotoxication

Antonym(s): information foraging

Expressions from related concepts: information overload, information-digestive disorder, information obesity

Which category? A failed attempt to give an everyday interpretation a name.

The phrase in the language system has not grown roots in this sense.

3. ~ a result of the continuously growing, uncontrolled and unchecked mass of data produced about network users.

Expressions used with the same, or very similar, meaning: monitoring

Antonym(s): freedom of information

Expressions from related concepts: information rights, information footstep

Which category? A failed attempt to give an everyday interpretation a name.

The phrase in the language system has not grown roots in this sense.

4. ~ a type of Denial of Service (DoS) attacks. Their perpetrators send 'information packages' into network data flow that disturb that consciously, with which service may be temporarily crippled.

Expressions used with the same, or very similar, meaning: flooding

Expressions from related concepts: cracking (malignant hacking)

Which category? A term of on-line crime.

The phrase in the language system exists only in the dictionary of programmers and system security experts.

1. American writer Caleb Carr introduced the term in the title of his article published on Salon.com in 8 January 2001. He did not use it as a technical term, but tried to introduce it as an umbrella term for a set of ideas that he considered strongly negative. His social science origin point was that the world ruled by corporate interests was characterised by the disruption of educational, environmental, and healthcare programmes and increasing violence, and information technology, regardless of any promises and expectations, technology had no power that pushes the world towards richness and happiness. In the meanwhile, it is bad to see an entire generation of young people who store information as virtual machines, bio-computers, as they cannot organise these crumbs into meaningful corpses of knowledge.

We live in an information assimilation deficit in which nothing except a strong government control over (network) content, as this cannot be expected from companies that control this massive amount of information. According to him, therefore, laws are needed that punish people who present false information as true, or who publish fiction instead of reality.

Carr received a couple of careful agreements, but more comments that point out weaknesses of argument, of his position, his lack of preparedness, consistency, and knowledge of the subject. The author of perhaps the harshest critique was from James F. Trumm, who demonstrated in multiple points that Carr presents unsubstantiated, easy-to-disprove opinions as facts (e.g. that the Internet ‘makes people stupid’ and ‘people believe whatever they read on-line to be true’), therefore according to his own norms, the rigour of law should have stricken him down.

People do not need agencies to decide if a piece of information is false or true. Unlike machines – as Nadeem Riaz puts it – we have the ability to choose among a number of possible solutions, choose their own point of view regarding the value and accuracy of information. And what authority could be trusted with the job of considering the value of truth, controlling the information flow, without thinking of sad historical associations?

As Carr used the term ‘information poisoning’ for a group of heterogeneous phenomena, it has no synonyms. It is, however, certain, that it enriches the information-related ‘panic literature’. Because of the problematic nature of his thoughts, the discourse he started did not continue. However, the term ‘information poisoning’ was added to the dictionary, and it soon found new life with new meanings.

2. A young blogger, Scott H. Young published his blog entry titled ‘9 Steps to Stop Information Poisoning’ in August 2007. In his view, ‘information poisoning’ is simply too much information received, therefore a synonym for information overload. His idea for people matches Carr’s: “...more information makes you think you know more. Even if you actually know less.” According to him, irrelevant measurements (that often lead to incorrect conclusions and are superfluous) and self-serving, simplistic analyses and theories that replace experience, but only increase doubts are some typical sources of errors.

Young (*nomen est omen*) attempts to make his advice more palatable using shallowly presented and interpreted examples, but he does not get further than repeating the thesis that is so important to Carr (“knowledge is more than information”). It is strange to hear as his ninth piece of advice – from an enemy of too much information and superfluous measurements – that keeping track of hours spent learning, nights spent in the University library, and pages of notes may help create the appropriate focus.

Young, naturally, is not alone, neither in his approach, nor in his choice of words. Out of all the uninspired authors who wrote about the topic, Bob Sterling stands out only because he grew information poisoning into a veritable cloud of metaphors. We must detox by reviewing our information consumption habits. The antidote comes from realising that fear of being left behind gives birth to our desire for information, and we have the medicine, as well: less reading, a reduced information environment, and avoiding the ‘next big thing’ that would make us jump. If the cure is successful, the certain sign of healing is that we suddenly have a lot of available free time – and what can we spend that doing, if not consuming information and experiences? Young and Sterling explain information overconsumption with inside motivating forces: we desire too much information ourselves, we poison ourselves (therefore we meet the relatives of concepts such as information digestion disorder or information bulimia). They expect the solution from a change of approach: develop new habits.

3. For Adam Gurno, information poisoning is something else entirely. Poison gathers not in the individual, but outside, in corporate and government-built databases, and it is no else than the analysable mass of data regarding the citizen’s personal data, user habits, purchases, phone calls (or even their position), or on-line history. Thus the task is: to remove or at least, decrease our information footsteps, this is why he developed and published his method: the ‘Beginner’s Guide to Information Poisoning’. He correctly feels that control, participation in the creation and control over the data mass is key. But until the legal dimension of information self-determination changes, we have no option but to take the issue in our own hands, and perform at least those steps that we can now, but use rarely (unsubscribe from lists, be careful with our data, etc.).

4. David Irving suggests to use ‘information poisoning’ to refer to malicious on-line actions that were previously called ‘routing and DNA attacks’. This is one of the four types of Denial of Service (DoS) attacks, that may completely paralyse the service. A massive amount of wilfully generated data or false information that deceives the network traffic control gets inserted into the data stream, buffers overflow, and sooner or later, the system breaks down. Irving (and we) feel the analogy of ‘poisoning’ to be correct, because the real issue is not this ‘overflow’. What happens is similar to a breakdown of communication relationships (e.g. in the case of baseless gossip or intrigue – trust is decreased in the co-operating technological systems, as well). All this has a recognised metric: Advogato’s trust metric. And as the attack exploits weaknesses of authentication, the basic routines of connection between the various protocols are ‘contaminated’. Many seek the way out: the antidote to attacks that extinguish sources of trust are proper authentication and reputation systems that give a new base to inter-system communications. (For example, Cat Okita’s recommended ‘Aura’).

EVALUATION AND RECOMMENDATION: Discourse 1 is exhausted, and the literature typically uses other terms for discourses 2 and 3. In these two cases, we consider using ‘information poisoning’ to be a solely linguistic idea that, for now, has no reception or followers, and has not diffused in on-line communities. (Luckily, as it is a typical product of moral panic). However, the fourth meaning may grow roots and become part of the network safety discourse, a true technical term.

References:

- Carr, C. (2001): Information Poisoning. January 8.
<http://archive.salon.com/books/feature/2001/01/08/carr/index.html> [2007-10-20]
- Gurno, A.: Beginner’s Guide to Information Poisoning v2.
<http://gurno.com/adam/poison.shtml> [2007-10-20]
- Irving, C.: The Achilles Heal of DNS.
http://www.sans.org/reading_room/whitepapers/dns/565.php [2007-10-20]
- Okita, C. (2003): Aura. A peer-to-peer reputation system.
<http://www.geekness.net/tools/aura/aura.pdf> [2007-10-20]
- Serling, B. (2007): The Internet is Poisoning Your Business. March
<http://www.copywritersboard.com/39712-post9.html> [2007-10-20]
- Young S. H. (2007): 9 Steps to Stop Information Poisoning, Blogpost, August 27.
<http://www.scotthyoung.com/blog/2007/08/27/9-steps-to-stop-information-poisoning/> [2007-10-20]
- Advogato Trust Metric: <http://www.advogato.org/trust-metric.html> [2007-10-20]

Information policy

~ the entirety of laws, regulations, and political practices that, in an ideal case, approaches the strategic development and operative management of information-related social subsystems with a system and process-centred approach.

Expressions used with the same, or very similar, meaning: information society strategy

Expressions from related concepts: information sectors, information industry development, information sector, information infrastructure development

Which category? A term used not in the scientific world of political science, but in the practical world of policy-making.

The phrase in the language system is present to the extent that the political discourse reflects areas covered by information policy.

Numerous areas intersect in an information policy with a system approach, which should be handled in a unified concept and view. Paradoxically, as IT and telecommunications entered the mainstream of information society development, less and less attention was paid to the important areas of information policy that had already been born and developed in the 70s.

If we start from media policy, the field of printed press that, for now, is shaped solely by magazine support, has to be put next to radio and television immediately, or the issues related to the role of the State in Internet content provision (including areas related to the digitising of cultural heritage). Book and publishing policy is strictly connected to all this, and there are support programmes for their central influencing. From here, library policy is only a single step, especially regarding the provision of the basic systems necessary to access literary education and international databases indispensable for staying in the scientific competition. Let's not forget archives and the tasks related to changing over to electronic archives. Or operation of large, central information factories (such as national news agencies, statistics offices, meteorological institutions, patent offices, the post) according to their mission statements renewed time and again.

The government is the producer, owner, and provider of an immense information fortune that offers multiple use options above and beyond customer transactions: from geo-informatic base systems (land registries, cadastres, various map databases, including utility maps) to environmental protection information systems to the provision of up-to date data regarding the road network, transportation, traffic, and tourist information, and from patent information to job market registries, university admission information, and public databases. Other "do-

mains” that belong to integrated information policy are: foreign language skills, that may have a decisive effect on the future of the country, the professional supplying of information objects for public spaces, public institutions, and roads, and the culture of orienting physical movement with signs (signage and digital signage).

A comprehensive government information policy must manage all areas in a complex way: with up-to-date legal and technological regulation, professional management, wherever necessary, by providing and developing base systems, promotion, the constant production of new knowledge regarding the information policy field itself, and “importing” them as best practices. The efficiency of information processes is also an important “indicator” of “back office” government world.

EVALUATION AND RECOMMENDATION: In various countries, there is little attention paid to information policy in the shadow of informatics strategy planning. If this area will grow more valuable, the expression will grow better known and will diffuse more, and it will go from the flow of professional communications to the language of the press.

References:

Braman, S. (2006): An introduction to information policy. In: Change of state: Information, policy, power, Cambridge, MIT Press, 1–8.

Information pollution

~ the amassing of useless, incomplete pieces of information that spread mental infections in our information environment.

Expressions used with the same, or very similar, meaning: information poisoning, disinformation, misinformation

Antonym(s): information filtering, information cleaning, information organising

Expressions from related concepts: information revolution, information overload, information distortion, information management

Which category? An everyday created term.

The phrase in the language system is well diffused, but it mostly appears in reasonings of dubious value.

The expression, created in the image of environmental pollution (and, more specifically, noise pollution) became widely known when the Pope of web design, Jakob Nielsen started to talk about it in countless publications and presentations, with a prophetic vigour. However, Nielsen's main theses are not now, he merely reorganises theses that had diffused in the second half of the 90s.

According to him, we see information pollution wherever we turn. Unnecessary information has diffused around us to such an extent that they started to virtually control our lives. The most endangered environment is the Internet with its multitude of unchecked websites, worthless content, spam mail, and the unreadable mass of newsletters. But the physical world is no exception, either: our attention is often drawn to banal or completely meaningless facts. For example, in his view, operating manuals are full of completely unnecessary warnings. Think of a lawnmower, for example, that warns us that the device can cause injury. But we may just as well think of advertisement papers that appear in our mailboxes by the dozen every day, most of which go unnoticed.

Nothing proves the popularity of these ideas better than the fact that one of our teacher training institutions chose to include this in its mission statement: "The students of the future...will have to carry out their tasks despite the environmental and information pollution!". However, the true question is not how the unhealthy, detrimental nature of a piece of information or the unsustainable nature of an information environment may be decided – as the first documented user of the concept, an excellent chemical researcher first saw in 1971.

In order to get over scaremongering and a conversation to begin, it must become clear: an alarm that is built on stating the fact of being polluted is not enough, statements must be made regarding the level of pollution. And after this

becomes possible to clear up, the question will be how the polluted information hindered the success of what action.

Therefore publications that, for example, manage to link polluted information to the damage caused by it in a corporate organisation are worthy of attention – for example, in professional decision-making process, where performance is largely dependent on the quality of available information (Orman, 1984).

EVALUATION AND RECOMMENDATION: A considerable part of the literature of information pollution only creates panic so that it can sell a service to the appropriately scared reader. The worthless nature is subjective in a number of cases (for example, banal information is listed on lawnmowers not for reasons of information purity, but legal ones) in other cases, it is not universal (only true for a few, not everyone). As a curse word or in a role critical of the age, it lures into laziness of thought; meaningful conversations may be reached by an appropriate definition and evaluation of the consequences of the polluted nature.

References:

- Nielsen, J. (2003): IM, Not IP (Information Pollution). Queue 8, 75–76.
Twist, J. (2003): Web guru fights info pollution. BBC News Október 13.
<http://news.bbc.co.uk/2/hi/technology/3171376.stm>
Ettinger, M. B. (1971): A solution to the information pollution problem. Chemical Technology 6, 330–331.
Orman, L. V. (1984): Fighting Information Pollution with Decision Support Systems. Journal of Management Information Systems 2, 64–71.

Information power

1. ~ in the political theory and civil rights vocabulary, a form of power that limits citizens' freedom of choice and action. Its extended meaning covers every state of two-way information asymmetry, where one of the poles can exploit this to create a dominant situation.

Expressions used with the same, or very similar, meaning: information advantage, information influence, information monopoly

Antonym(s): information liberation, information pluralism

Expressions from related concepts: information asymmetry, information panopticon, freedom of information, open data, information games, information rights

Which category? A phrase created at the intersection of political and legal sciences that is being folklorised; used in more and more contexts.

The phrase in the language system is getting more and more popular, as the issues that information power refers to are more and more in focus.

2. ~ the power and ability to control one's own fate and to have a say in the decisions that affect one's life with more autonomy, attained by studying, achieving knowledge, and a more and more self-confident navigation in the world of information.

Expressions used with the same, or very similar, meaning: information competence, learning, studying

Antonym(s): intellectual gap, information deficit

Expressions from related concepts: information literacy, information erudition

Which category? An expression first dreamt up as the name of an educational programme that is trying, by all means, to become a common noun.

The phrase in the language system is only known in the world of school librarians, but there, it is still spreading.

1. Various theories of power classify types of power in innumerable ways. In these, information power is present either as an independent category (e.g. as part of the action power, symbolic power, instrumental power, information power division), or a tool that aids the creation and retention of (economic, ideological, organisational, etc.) power. In the general sense, information power is an asymmetric state in which one pole is vulnerable to the other because it is predictable, observable, transparent, yet the other pole is unknowable and invisible. This definition is important as it – correctly – emphasises the reciprocal nature of asym-

metry. Numerous authors define the core of information power as possession of information and differences to accessing it. Albeit on the primary information power scene, in the relationship of state and citizen, it is of core importance to deduce meaning based on knowledge on each other. This does not mean that the citizen could not face other poles: in every case, when one cannot know what information communication partners have on him/her, one's freedom of choice and action is limited. In order to nuance this, the concept of information status was introduced as a name of the relationship between information required for optimal decision-making and the real access to it (with little professional response or continuation).

In the above sense, we may encounter citizen versus advertisers, citizen versus employers, citizen versus doctor (and separately: psychiatric institutions), citizen versus media, teacher versus student structures: the stake is always how a certain amount of control over information processes and sets is transferred to the side of the citizen considered a recipient, consumer, or client. How can they control the truthfulness of advertisements, how can job seekers gain information on companies in advance, how can an ill person play a real, active role in the diagnostic and therapeutic processes, how can one control the power of media controllers, and how a student can accept the information conveyed by the teachers as real and convincing.

Information liberation reflects the loosening of an information power structure as a result of pressure applied by the actor with the disadvantageous situation; when the actor with the beneficial situation initiates the alleviation of differences, is the separation of information powers. The general interpretation of information power is suitable for use in a social history context, in a meaning that matches current interpretation, even regarding ancient high cultures.

2. The Association of School Library Media Specialists (AASL) started publication of its series on methodology and standardisation in the 1970s, using information power as a fancy name in the title (AASL, 1998). As it could be expected, the concept took on a life on its own, and, breaking away from its birthplace, it was, more and more, used as a meaningful expression with a special semantic flavour that separates it from related concepts (Howrey, 2015). As the intersection of common definitions, information power should be called the ability to study independently and creatively, facilitated by the possession of appropriate information erudition and literacy, in an expanded technological environment. School libraries that support this are rightly called information-powered libraries (Hughes-Hassell and Amer, 2001). The development of meaning has interesting parallels with Guy Claxton's learning power and learning powered school concepts – it is hard to tell, which one affected the other.

EVALUATION AND RECOMMENDATION: The solidification and clarification of the basic meaning of information power will depend on whether the meaning based on the moment of information reciprocity will be accepted over the use in the (incorrect) sense of ‘information superiority, influence gained by using information’. The second meaning that puts information power in a positive context only mixes the conceptual space up: it is strongly tautological, the categorical pressure that would necessitate it as compared to other similar expressions is not visible. The same is true regarding the rare network theory interpretation, as well. In the case of a system of relationships mapped like a sociometric drawing, it is completely unnecessary to call the number of occurrences for each person as nodes ‘information power’, seeing as there is a strong term for it already: betweenness centrality.

References:

- Stehr, N. (2015): *Information, Power, and Democracy. Liberty is a Daughter of Knowledge*. Cambridge University Press.
- Tricker R. I. (1993): *Harnessing Information Power*. Hong Kong University Press.
- AASL (1998): *Information Power: Building Partnerships for Learning* Amer Library Assn Editions.
- Howrey, M. (2015): *Information Power, Technology, Life-long Learning and Mentoring In One Package – A Library!!* Linked In, Nov. 16.
<https://www.linkedin.com/pulse/information-powertechnology-life-long-learning-mentoring-mary-howrey>
- Hughes-Hassell, S.- Amer, A. (2001): *The Information-powered School Library Assn. Editions*.

Information prison

1. ~ confusion caused by erroneous information planning or data visualisation. Too much visual noise makes understanding important information considerably harder, or even impossible; free information flow is made harder, and interpretation becomes limited.

Expressions used with the same, or very similar, meaning: information maze, information loss

Antonym(s): (good) information architecture, infographics

Expressions from related concepts: information planning, data infestation

Which category? An ad hoc term of information and knowledge management.

The phrase in the language system is unknown in this meaning outside information planning literature.

2. ~ megacorporations and other organisations collect the data of citizens as users by violating their basic information rights, interfering in their personal lives, and watch people in the closed digital space the way a prison guard watches prisoners.

Expressions used with the same, or very similar, meaning: information panopticon, on-line profiling, transaction tracking, monitoring

Antonym(s): information self-determination

Expressions from related concepts: data mining, information footprint

Which category? An ad hoc term born on the border of information and knowledge management, information politics, and information law.

The phrase in the language system – it managed to get in, but it was forced out by next generation phrases used for the same phenomenon.

3. ~ stopping the propagation of information with knowingly and institutionally used instruments of power, making information inaccessible. A dictatorship puts an entire country into an information prison if it does not let news and information regarding the current situation in from the outside, nor out from the inside.

Expressions used with the same, or very similar, meaning: information blockade, information quarantine

Antonym(s): free information flow, publicity, transparency

Expressions from related concepts: information retention, information politics, dictatorship

Which category? A stylistic expression for an education policy practice that, despite large physical and temporal distances, has many similarities.

The phrase in the language system occurs occasionally, the chance of its appearance decreases continuously. It is kept alive because there still are countries it may describe in certain cases.

1. Information prison was introduced to the literature of his field by the father of information design, Edward Robert Tufte in a book published in 1990. The two-dimensional, static depiction of our three-dimensional world is, by itself, difficult to comprehend, but the failed utilisation of visual options and bad design are sources of further “noise”. If unnecessary, aggressive elements distract us from the real content, the creator imprisons information, and thus the user as well. Representation builds walls between information senders and receivers. This is why Luigi de Rossi (2001) considers the phrase ‘visual prison’ to be more exact.

The ‘cure’ is to free information; making it simple, separating the appropriate layers of information, and associating them with each other (e.g. colours, adequate sizing and forms).

2. Alan Wexelblat noticed, even before the Internet became so massive, that monitoring users’ network transactions and including the acquired data into decisions and behaviour is a very promising direction for companies and certain state organisations to take (Wexelblat, 1997). This danger that had since become reality in more than one way reminded Wexelblat of Jeremy Bentham’s late 18th century panopticon. In this very efficient prison, one observer can monitor all inmates at the same time, while the inmates see neither each other, nor the guards. We do not see nor notice our data being collected, therefore we are in a situation similar to the inmates in the panopticon. This sort of information imprisonment may have multiple antidotes, from legal regulation and control of data collection to cryptoprivacy.

3. The communications policies of the Soviet Union and Socialist states that made receiving foreign radio and television transmissions virtually impossible, so that their citizens could not access media products and literature that were considered subversive and harmful, were often called an information quarantine or information prison where the population was thus “imprisoned”. In the world press, the expression is mostly used these days to refer to North Korea – but journalists also referred to the “information prison” when stamp prices increased five hundred-fold (!) overnight in 2004 in Zimbabwe, preventing poverty-stricken people from sending each other letters.

EVALUATION AND RECOMMENDATION: The expressions that show up both in the register of information design and in policy theory with different meanings do not disturb one another, we do not have to worry about a collision or confusion of meaning. The second meaning, however, was filtered out by the stream of texts on the much stronger technology and greater danger of network monitoring.

References:

- Rossi, L. C. (2001): What is the data-ink ratio?
http://masterview.ikonosnewmedia.com/2001/12/15/what_is_the_dataink_ratio.htm [2014. 04. 11.]
- Tufte, E. (1990): Envisioning information.
- Wexelblat, A. (1997): How is the National Information Infrastructure like a Prison? In: The Future of the Internet, Charles Cozic (ed.), Greenhaven Press.

Information processing

~ the sum of actions that happen to information between entry and exit in various systems (animal and human minds, organisations, processing machines).

Expressions used with the same, or very similar, meaning: data processing, stimulus processing, information management, information process

Antonym(s): information loss, information blindness

Expressions from related concepts: information behaviour, information activity, information operation, information management, information government

Which category? A technical term in psychology, cognitive science, and IT, with the same basic meaning, but significant differences in the details.

The phrase in the language system is very well diffused, one indicator of which is that there are more than 50 books with the phrase in their title.

The most simply modelled information cycle has three phases, regardless of the host system. The input phase (sensor, data flow-initiation), the processing phase that ends with a decision/action command, and the output phase that starts at the decision and ends at the action, which often (but not necessarily) answers problems represented by the input phase – with the degree of success depending on the correctness of the decision.

From simple animal flight reactions to people reading letters to the operations of an accounting office to the data mining of Big Data megacompanies, the information processing stage represents the entirety of actions between input and output. Naturally, signals are processed by the machine systems of electronic information processing, but as signals may, with the proper transfers, be turned back into information, the phrase may be used in this sense. In computer science, computation is performed by algorithms, in the form of computational operations. That is why the International Federation for Information Processing also includes it in its name. As machine information systems became more and more complicated, from the first mechanical calculator to contemporary cloud architecture, the technical and information theory discourse of information procession expanded further and further (see, for example, the monumental trilogy of David J. Blower (2011, 2013, 2016)).

And while psychologists and representatives of the cognitive sciences have analysed the operational characteristics of the nervous system (as whatever we call human perception, thinking, or learning is, in this abstract model, basically information processing), the public discourse has, for at least two decades, been primarily formed by the approach and presentation of machine information pro-

cessing. This is another reason why differences between human and machine must be perceived. On a flow diagram, the process of machine information processing may be divided into sections, and every section may be pre-programmed. For humanity, this pre-programming was performed by evolution, yet the process is full of uncertainties, and depending on the individual, there may be so many unique variables that the output is often impossible to foretell. What happens can often be described not with subsequent sections that pass on processing tasks to each other, but by loops, parallels, junctions, and random connections.

EVALUATION AND RECOMMENDATION: Information processing is a concept on a high level of abstraction. When it appears as part of public and higher education, as part of the educational practice, we believe it is important to outline the similarities and the differences in the special characteristics of the general and the specific processing systems.

References:

- Spear, N. E. – Miller, R. R. (1982): *Information Processing in Animals: Memory Mechanisms*. Psychology Press.
- Sowa, J. F. (1983): *Conceptual Structures: Information Processing in Mind and Machine*. Addison-Wesley.
- Blower, D. J. (2011): *Information Processing: Boolean Algebra, Classical Logic, Cellular Automata, and Probability Manipulation*. CreateSpace Independent Publishing Platform.
- Blower, D. J. (2013): *Information Processing: The Maximum Entropy Principle (Volume 2)*. Create Space Independent Publishing Platform.
- Blower, D. J. (2016): *Information Processing: An Introduction to Information Geometry (Volume 3)*. Create Space Independent Publishing Platform.

Information proficiency

~ the sum of measurable and potentially developed abilities and skills using which, infocommunications technology may be appropriately managed, and that aid navigating an information-rich work environment.

Expressions used with the same, or very similar, meaning: information literacy, information erudition

Antonym(s): information illiteracy

Expressions from related concepts: information culture, information competence

Which category? Professional-public use.

The phrase in the language system is on its way out.

Corporate human resources practice attempted to follow the fast changes in information culture with its previously developed methods. As basic computer user programs became indispensable parts of the fiber of work processes, companies and office organisation in the first wave of informatisation attempted to make their workers capable of the basic routine tasks and higher level abilities of electronic case management, data and table handling, text editing, and messaging using trainings and courses.

For this end, they have developed multi-level systems of certifying skills, abilities, and preparedness, using which where the workers are in learning certain base skills and practices, who may be used for what, where may they be relied for, and where do they need development in the case of new applications or internal reorganisation. Multiple systems and nomenclatures have been developed for the verified proofs and certificates necessary for this. The best known ones, such as the “European Computer Driving Licence” are still existing systems of exam evaluations and certificates.

Thomas J. Buckholtz named the required partial pieces of knowledge and the various certification systems ‘information proficiency’ in his eponymous 1995 book. ‘Proficiency’ is still widely used to measure or express the level of foreign language knowledge necessary for an activity – therefore using the same word was an obvious choice. The basic skills of an emerging new information ecosystem had to be learned like studying a foreign language. (And indeed, early text-based operation systems worked as a formal language of commands, and in order to understand a user program, dozens of words had to be learned again and again in an unknown or new meaning.)

However, this change of culture was of such and extent that it changed not only the world of work but the entirety of society. The concept that followed this change was not “information proficient society” that had occasionally been proposed. As in the shape of information literacy, activities performed in a computer environment become part of basic education in school, for work organisations, the key question is not the existence or lack of general basic information, but knowledge of the special user programmes that became huge in the meanwhile. An umbrella term was not necessary any more: the expression was born, than it disappeared from the language system.

EVALUATION AND RECOMMENDATION: In countries that move forward in the adaptation of information culture with a lag of a couple of years, information proficiency did not yet take root, its meaning is generally expressed by paraphrasing. Information fluency, i.e. the expertise that reflects a self-assured, easy, perfect knowledge, is looking forward to a nice career – even if its translation will be seriously problematic.

References:

- Buckholtz, T. J. (1995): *Information Proficiency: Your Key to the Information Age* (Industrial Engineering). Wiley.
- Spitzer, D. R. (2007): Transforming performance measurement: Rethinking the Way We Measure and Drive Organizational Success. *AMACOM*, 253–255.

Information property

~ information goods that had become legal interests; the legislation-regulation question is provision for their fate and use.

Expressions used with the same, or very similar, meaning: information goods

Antonym(s): free information, information public good

Expressions from related concepts: information self-determination, information richness, information rights

Which category? An experiment at the creation of an umbrella term that encompasses multiple areas; for now, its success is limited.

The phrase in the language system is rarely used in this form, as unique terms are used for the areas that belong to them.

Today, information property has three hot areas, that also reflect the history of the concept.

It all started with intellectual property, but for a long time, considering it a sub-set of information property did not occur, although it was clear that may it refer to an invention, a piece of know-how, or a literary or scientific work, their information nature is shared. Later, it was realised that even innovation is much more complicated from the information side, than it seems from the legal one (Kingston, 2010), and that, for example, the publishing practice that makes scientific publication created from public funds information property harms multiple interests. These questions lead to passionate debates that still are still ongoing.

The public discourse and legal reflection on the anomalies created by the stronger and stronger practice of information sharing joined this, even before the detonation of the Internet (Samuelson, 1991), especially with the explosive diffusion of the fashion of network filesharing. Here, almost every stakeholder encounters the problem that the one with the rights for information properties, who makes it subject to transaction, cannot dispose over all secondary or niche uses – or if they can, they do not have strong enough tools to stop illegal use. (In the meanwhile, however, modules that offer specialised software support to business information sharing: in the IBM WebSphere Integration Developer application, this is called the information property repository.) The fight between the various actor that occasionally grows into battles and legal trench wars is still ongoing, but in the meanwhile, a third front has also opened up.

Ever since it became clear that personal data and customer data are valuable to third parties, the drive – as users do not receive material gains from their data being used (at most, information ones), the bastion remained insuring the holder's right – is so that users can permit or deny using the Personal-Information Prop-

erty Set (PIPS). And as companies have often proved to be untrustworthy data users, a service provider profile was developed that offers a legally clean way of handling other companies' user data. Thus, the concept of Information Property Protection (IPP) was born.

EVALUATION AND RECOMMENDATION: It seems that the number of secondary expressions that build upon information property is growing and this concept-creation dynamic is a clear signal that the strengthening, clarification, and more common use of the expression is expected.

References:

- Kingston, W. (2010): *Beyond Intellectual Property. Matching Information Protection to Innovation*. Edward Elgar Publishing.
- Samuelson, P. (1991): Is Information Property? *Communications of the ACM*, 34. Available at: http://works.bepress.com/pamela_samuelson/200
- Titus, A. (2009): Is Personal Information Property?
<http://www.aarontitus.net/blog/2009/01/17/ispersonal-information-property/> [2015-03-26]
- Perrolle, J. A. (1987): *Computers and social change: information, property, and power*. Wadsworth. Publ. Co. Belmont.

Pseudo-information

~ a series of signals that we consider to have information value, but that, in reality, does not possess it.

Expressions used with the same, or very similar, meaning: hoax, lie, quasi-information

Antonym(s): information, full information, perfect information

Expressions from related concepts: deception

Which category? It is solely used in its everyday sense; as a financial term, the 'pseudoinformation'.

The phrase in the language system has entered at an unknown point, but its base had likely been 'false report'.

In its everyday meaning, the most common use of pseudo-information is to refer to a piece of information that contains no truth. These include deceptive messages (that are occasionally parts of the toolkit of people spreading viruses), and hoaxes meant to be funny.

On the other hand, information researchers like to find the exact meanings of the various categories. Luciano Floridi deducted logically why the statement that pseudo-information is also false information is true, and Mark Burgin proved that there is a difference between quasi-information and pseudo-information, depending on the effect that the same piece of information has on various recipients. Pseudo-information and misinformation are also different, as the latter contains some piece of reality that it conveys inaccurately.

Interestingly enough, it became a term of its own in bookkeeping, portfolio management, and stock market psychology. Here pseudo-information refers to processed data that does not reflect reality, but is from a less certain source (e.g. guesswork), and that may thus mislead calculations. At the stock market, pseudo-information based execution is the name of the event when the value of a piece of news is exaggerated, not noticing that it has already been priced.

EVALUATION AND RECOMMENDATION: The press likes to use the term pseudo-information, generally referring to false/misleading content, but a number of interpretations use it to refer to information that, while reflecting the world correctly, is unnecessary, or 'too much'. This should be pointed out as it makes the meaning of the phrase meaning unclear.

References:

Miller, P. B.W. – Bahnson, P. R. (2015): The Spirit of Accounting: Information versus Pseudo-Information Accounting Today.

Information public good

~ the group of information goods that are accessible as individual public law rights, by the reason of community membership, without compensation.

Expressions used with the same, or very similar, meaning: open information, Creative Commons licence

Antonym(s): information goods

Expressions from related concepts: information commons, freedom of information, information community, information group

Which category? A political economy term with a well-defined content.

The phrase in the language system appears rarely, mainly in professional-analytic fields, and is easy to mix it up with related terms.

In the beginning, there were public goods (commons, public roads, public bridges, public buildings, public spaces), created using public resources, and their use was made possible not by a market act (purchase), but by community membership. What is considered public goods in any minute, who and how may access them, why and where they should be trusted to the market and business forces and thus make them for-profit – these have always been complex power and economy questions.

The world of media giants rising as information empires started almost immediately to hurry the creation, financing, and operation of public media forms. This is how public radio and public television (both national and local) came to be. When Internet interfaces, network information services, and other dissemination channels have been added (for example, pamphlets, and public information billboards) in 2007, the technical term ‘public service media’ was consolidated, due to European pressure.

However, media content is only one of the classes of information goods. What is up with news agency materials, literary and scientific works, research databases, municipality data, meteorological and land registry data, timetables? When do things that appear, by nature, as commodities, lose this characteristic, and become public goods? And how do things that should be considered public goods, as they are created using public funds, become market products?

Principles, political practices, and economic rationality combine to create the output together.

“Information is not a scarce commodity, and economic science only recommends the market for scarce commodities.” (Perelman, 1998, 88., 90.) “However, considerable costs are associated with information collection and accumulation,

as are regarding the infrastructure that permits its transmission, even if the cost of individual information transmissions are negligible.” Based on this, copyright laws protect the market interests of creators of intellectual products, but after a certain point, allow making content into public goods. Or, theoretically, complete and total access to state (i.e. community) funded information goods would be the start, and citizens or companies (the ones that sell ‘free’ information, therefore need to pay the State) would only have to pay for added value, making it more utilisable. We rarely, if ever, see the realisation of truly public consumption of public goods in this ideal form. In the grasp of political and business interests, with the typically underfinanced information institutions and strict legal systems of the public sphere, the result is always a strange hybrid that hinders the transformative effect hoped from information access in multiple ways.

This is why Perry (1999) believes that, like the social contract of the Age of Enlightenment, the public sphere should make an information contract with its own citizens. Without this, people are left with a legal avoidance of state and copyright institutions, a personal provision of making one’s own intellectual property into public goods by legal sharing methods.

This is what Creative Commons, an NGO that allocates licenses to information objects, created in 2001, provides. Therefore in the space that had previously been controlled only by copyright laws, a solution where the creator can decide on the limits and restrictions (or the lack thereof) with which intellectual property is made into public goods. (Attention, information commons means something else!)

EVALUATION AND RECOMMENDATION: It is important to emphasize that community-owned fibre optics networks or a community Wi-Fi-system or access point are not information public goods, only their physical and institutional infrastructures (and in this quality: infrastructural public goods). The concept covers innumerable forms of information from public data to the world of intellectual property, the hottest area of which is access to scientific publication and literature and liberating a much larger percentage of state and municipal data to the information public good status. Accordingly, the phrase is expected to occur more often in the next years. It must be made clear at its use and interpretation that in order to create a clear meaning, the co-existence of economy theory and political philosophy viewpoints is an educational task cannot be avoided.

References:

Perelman, M. (1998): *Class Warfare in the Information Age*. St. Martin’s Press

Perry, B. J. (1999): *Is Information a Commodity?* October 20.

<https://www.nii.ac.jp/publications/kaken/HTML1999/99Perry02-E.html> [2015-03-26]

Q

Information quality

~ the gradual shift in the form, quantity, package, complexity, and timing of information that causes a certain shift in the processing system. In clear communication situations, the quality of information is higher the smaller the difference between transmitted and received information is.

Expressions used with the same, or very similar, meaning: data quality

Expressions from related concepts: information management, information processing, information receptiveness

Which category? A term that is well diffused in its generic meaning, but by now, mostly just used in a narrow quality assurance sense.

The phrase in the language system is mostly just known to data science and information management experts.

In the same information situation, the same reference set, the same piece of information can have countless variations. Depending on the 'definition' of the transmitted new information, the number of details it is valid for, the channels it uses, and the noise on these, the achieved effect may be considerably different. The spectrum of quality goes from perfect to perfectly useless, information quality is often used in this context (but without explanation) by information science and media and communication science. In a communicative environment "information appropriateness is defined by whether this effect is suitable for the sender's original intent, and how much resources understanding the information requires for the recipient". We may call this information quality.

The interpretation of quality management practice and literature started out as a special case of this, but by now, it seems to force out all other interpretations. The need for standardisation and the mutual connectivity of processes called a separate type of services to life, that entered the everyday life of companies quickly. The regulation of the various company processes and their relationships to the prevailing state of the art, the most developed solutions can be certified and validated.

In an audit, a specialised market actor issues a certificate that is a signal and a guarantee for company partners that they are about to develop a relationship with is correct.

It is no surprise that the swelling of handled data has given birth to an independent quality assurance area to certify the appropriateness of data and data handling systems. In the beginning, they referred to all phases of the data collection and processing process, later, data cleaning (removing low-quality data from the system) and the qualities of data analysis were emphasised, as these can increase the ratio of data utilisation. And as these fields were emphasized, the name rightly became information management (Information Quality Management, IQM, Total Information Quality Management, TIQM) (English, 2003).

EVALUATION AND RECOMMENDATION: We trust that the dominance of the quality management-focused use will stop one day, and then, the expression will return to its most generalised use. In a digitalisation context, the concept of information quality is often used in the cases of entered text or images (regarding the image quality and clearness of the operation). And although the relationship of the digitalised set to the original – in the case of inappropriateness – doubtlessly affects our information operations abilities, digitalisation, in fact, is not the quality of information, but of the carrier conversion. Information can support a high level of signal distortion, and information loss only occurs after a certain point. Therefore we cannot recommend its use in a digitalisation context.

References:

English, L. (2003): Total Information Quality Management – A Complete Methodology for IQ Management Information management. September 1.
<http://capitalone.com/> [2016-05-07]

Information quarantine

~ an artificial closure of data with the aim of stopping confidential or dangerous information from getting out or spreading.

Expressions used with the same, or very similar, meaning: censorship

Antonym(s): information leaks

Expressions from related concepts: withheld information, encryption

Which category? Professional-public use

The phrase in the language system appears occasionally, in an unbalanced, haphazard way.

We believe the expression is a member of the family of words where various authors re-discover the phrase again and again in similar contexts and trains of thought, independently of each other. Another fact pointing to this direction is that researchers analyse neither the origins, nor the interpretation of the concept. The first is not important, and the meaning of ‘quarantine’ is so well-known and obvious that the disease analogy all but offers itself: the artificial, conscious, institutional, hermetic closing off of news that spread danger, like an infection from the world.

It typically means silencing information that is confidential or sensitive, that can have a negative effect on society or its major groups – or more rarely, on a single person. It most frequently appears in texts on global or national issues (wars, destructive epidemics), but occasionally it also appears in the world of business. It is a common occurrence that a company orders a complete information-retention, perfect secrecy regarding a piece of information, so that it can keep or improve its market positioning.

EVALUATION AND RECOMMENDATION: the use of the phrase will likely stay occasional. As it is used for a known phenomenon that does not require a new expression, a too that is common use would decrease the effect of being unexpected. We do not expect this pair of words to be on the way to become a term; we will be as likely to encounter them in the future, especially in media, as we are now.

References:

‘Information quarantine’ in force (Editor) Tobacco Reporter 2016 April 7.

<http://www.tobaccoreporter.com/2016/04/information-quarantine-in-force/>

Quasi-information

~ an object that carries no content, meaning, or sense, but is formed like information.

Expressions used with the same, or very similar, meaning: quasi-communication, pseudo-information, misinformation, disinformation

Antonym(s): perfect information

Expressions from related concepts: information logic (infologic), information value, information quality, information consumption, information spectrum

Which category? A strictly formalised info-logical term with a meaning that matches its everyday, spontaneous use.

The phrase in the language system is very rare.

After Burgin (2010), we may call the recipient information environment where we examine both the change caused by the new information that enters and how the content of the information is related to reality (false or true).

Thus we are to face three important pieces of the class of negative information, along with useful, genuine information. Misinformation causes a change in the infological system; furthermore, one that may lead to inadequate actions (its deliberate version is disinformation). Pseudo-information, even though it does not reflect reality and is often constructed (made-up), may have elements that lead to a not necessarily negative change.

The nature of quasi-information is that it causes no changes in the infological system, and does not even get to be processed (Burgin, 2010). That's why we can say that it is empty in the everyday sense, it has no content, and it is useless – it promises to be information, but it not actually is it.

And while this everyday use gets stronger, it is still used in its strict, narrow meaning in various scientific fields. In mathematical statistics, it even has a derived term (Jiang, 2005), quasi-information matrix (QUIM), and psychologists discuss non-verbal quasi-information in quasi-communication (Nakdimen, 1984).

EVALUATION AND RECOMMENDATION: Every occurrence of the term is valid, except for 'quasi-information society' offered as an 'antithesis' of information society (Becla, 2012), which, along with its companion, 'disinformation society', are deterring examples of categorical accuracy being sacrificed for an attempt at humour.

References:

- Ruyer, R. (1965): Quasi-information, psychologisme et culturalisme. *Revue de Metaphysique et de Morale* 70 (4), 385–418.
- Burgin, M. (2010): *Theory of Information: Fundamentality, Diversity and Unification* World Scientific.
- Jiang, J. (2005): Partially observed information and inference about non-Gaussian mixed linear models. *The Annals of Statistics* 33 (6), 2695–2731.
- Nakdimen, K. A. (1984): The physiognomic basis of sexual stereotyping. *The American Journal of Psychiatry* 141 (4), 499–503.
- Becla, A. (2012): Information Society and Knowledge-based Economy – Development Level and the Main Barriers – some. *Remarks Economics & Sociology* 5 (1), 125–132.

R

Ragmen of information

~ those who trade in content produced based on information ‘found in the trash’ – i.e. popular media itself and its writers.

Expressions used with the same, or very similar, meaning: information recycling

Antonym(s): primary information gain, personal experience

Expressions from related concepts: media, infomediaries, information sharing

Which category? A descriptive term created as a colourful category for professional texts that later proved to be a failure to describe a class of participants in information flow.

The phrase in the language system is not hapax legomenon, only because it was quoted once, 14 years after its birth. Another twenty years have passed since, and no one else touched it.

Witold Rybczynski (1943–), born in Scotland to Polish parents, is recognised as a Canadian-American architect, technology critic, and writer. On the 26th page of his book on social control over technology, he writes about the role of second-hand experience (Rybczynski, 1983). The most important primary source of this is information shared through the network of personal relationships, the world of gossip and hearsay, where trust can only be maintained by taking personal responsibility. However, nowadays, according to Rybczynski, the place of these (and education) has been taken over by newspapers, magazines, movies, radio and TV, and the “ragmen of information” – and as we barely have any first hand experience on technology anyway, maybe being mediated by media has such a negative effect in no other place.

Rybczynski's word creation is based on the analogy of second-hand experience and second-hand clothing, rags. The development of meaning went from rag, useless things to be discarded, and people removing those from the waste bins and re-selling them, to referring to people doing the same to information as ‘ragmen’.

Rybczynski had called media institutions the ‘ragmen of information’, and the only author who ever quoted his word, Irving Fang uses it to refer to authors of popular media in his short chapter on the power of information, admitting that

even second-hand information may, on occasion, be very efficient. However, since then, no other occurrence is found on-line: the expression will likely be forgotten.

EVALUATION AND RECOMMENDATION: In our opinion, the reason for the lack of continuation is that the theoretical construct behind the created word is erroneous. Only a part of media-transmitted information may be considered ‘second-hand, used news’, found in each other’s trash bins, and recycled by low-prestige papers that, lacking their own journalists and authors, have problems creating content.

Media is, in fact, the custodian of institutional expansion of experimental space, a social agent that serves the expansion of the capacity of learning, above which the world indeed has enough control. Just as personal information exchange is the transfer of not only gossip and hearsay, but also experience and knowledge, and even if a baseless, inaccurate piece of news can survive for a while, trust and a given media organ can only exist and work permanently if it does not stray from the personal experience-based feedback of authorisation. Rybczynski’s failed word creation warns us that it is misleading to think of institutions of mass communication, that are still considered key actors in information ecosystems, primarily as lie factories, and machines of misleading – even if, in the era of fake news, many things point in this direction.

References:

- Rybczynski, W. (1983): *Taming the Tiger: The Struggle to Control Technology*. New York, Viking Press.
- Fang, I. (1997): *A History of Mass Communication Six Information Revolutions*. Focal Press, xix.
<https://richunichu.files.wordpress.com/2014/09/information-revolution.pdf> [2016-05-03]

Information ratio

~ the rate that demonstrates the extra returns an investment expert may generate for the company or another client, taking every risk into consideration; and the difference between this and the best results achieved by competitors.

Expressions used with the same, or very similar, meaning: information rate

Expressions from related concepts: asymmetric information, information benefit

Which category? A financial technical term with a solidified meaning.

The phrase in the language system is, for now, is only used by a narrow range of experts.

The formula for calculating the information ratio was created by William Sharpe in 1966, therefore it is often referred to as the Sharpe Ratio.

For corporations and other market actors, it is very important to measure and evaluate not only the ratio of realised profit, but also the efficiency of the work of the expert responsible for investments (portfolio manager, fund manager), and for their activities to be judged based on the actual risk levels. Thus, information ratio starts with the idea of checking the extra profit of investments for the company per month (or other time unit), but demonstrates the extra profit's size over the benchmark (the best results of any competitor).

Its formula: $\text{Information ratio} = (R_p - R_b) / \text{Sp-i}$ In the formula, R_p represents the portfolio returns, i.e. income from the entirety of investments, R_b represents benchmark returns, the highest income from competitor investments, and Sp-i represents the difference between the portfolio returns and the given index.

References:

Quian, E. – Huaa, R. (2004): Active risk and information ratio. *Journal of investment Management* 2 (3), 1–15.

Clement, C. (2009): Interpreting the Information Ratio, CFA.

<http://www.jasonhsu.org/uploads/1/0/0/7/10075125/theinformationratio.pdf> [2015-08-13]

Information receptiveness

~ a skill and attitude towards the conscious use of information for business, government, mental, or cultural development.

Expressions used with the same, or very similar, meaning: information awareness

Antonym(s): being anti-information

Expressions from related concepts: information culture, information sensitivity, information centeredness

Which category? Professional-public use, first in management science, today mostly in information policy.

The phrase in the language system is well diffused. Its use is common, but not exclusive, its meaning is also conveyed in other ways.

In the second half of the sixties, in order to understand the process of innovation better, researchers examined whether the size of companies is related to the attraction of information that is so important to deliver new ideas. Their findings indicated that the bigger an organisation is, the more hierarchical and bureaucratic elements there are, that make sharing inside the company harder, but the more employees there are, the bigger the “surface” is for the outside environment, and all in all, the more impulses the organisation receives from the world with its human antennae – and as such, the bigger the information receptiveness of the company is (Davies, 1979).

The phrase did not enter the vocabulary of information management, however, it gained new life in describing and understanding the digital divide and the information culture of disadvantaged people. The approach that information accessibility and utilisation have to be taken further has evolved based on the work of two Korean researchers (Kim and Kim, 2001): available information is to be used in a way that aids the person’s mental development, enriches knowledge, provides more power to solve problems, and as thus, increases quality of life. This is information receptiveness, that, naturally, can and should be interpreted both on the community and the society level. In an advanced information society, the countries of the world should aim for ensuring, through freedom of information, that more and more people get to the level where the digital divide, closely related to financial differences, along with the often extreme differences between societies, regions, and individuals, is moderated. In Indonesia, the 2008 Act on Public Information Receptiveness attempted to initiate this cultural shift inside state organisations for good governance.

There also is a phrase that names the highest level of information receptiveness. Persons or groups enter the state of ‘information mindedness’ when they act consciously in order to increase their information receptiveness, uptake, and capacity. They study, consume useful content, educate themselves, participate in events – or actively work on delivering useful and valuable information to people of various genders and ages who live in various regions.

EVALUATION AND RECOMMENDATION: Understandably, the expression is the most popular in developing countries. ‘Transformation’ better explains its meaning, therefore for describing what is ‘more than use made possible by access’, more and more models are using ‘transformation caused by information’ instead of information receptiveness.

References:

- Davies, S. (1979): The Diffusion of Process Innovation. CUP Archive.
Mun-Cho, K. – Jong-Kil, K. (2001): Digital divide: Conceptual discussions and prospect in The Human Society and the Internet. Springer, Berlin, 78–91.

Information recycling

~ extracting useful data from data sets once considered worthless and information garbage using repeated processing operations.

Expressions used with the same, or very similar, meaning: re-using information, data recycling

Expressions from related concepts: information processing, information utilisation, information value chain, information retrieval

Which category? A consolidated term in maths and physics, in other areas, virtually every use is a re-construction.

The phrase in the language system appears occasionally, it is only known by a narrow range of professionals.

Information has a transformative nature: it is always an external effect that encounters an internal state that gives birth to information – that will have innumerable transformations. This is also true regarding the state of information when it is captured after objectification, as a sign. Every time when there is an internal reason for the re-transformation of signals that are now considered external, there is a chance for information sets that were considered to have lost their significance to become sources of information values again.

The daily weather records of Irish monks from centuries ago return as prime climate history databanks. Merchant diaries that contain masses of seemingly uninteresting details are discovered as fantastic sources of social history information. A pair of Japanese researchers (Wu and Watanabe, 2011) hope for the reinforcement of social creativity in the world of Big Data by using appropriate brainstorm-like ways of attempting to find out which pieces of information may be reused for which goals. Two artists, Joachim Blank and Karl-Heinz Jeron use information artworks for the creation of their own pieces of art, and they call this information recycling.

However, they do not know of each other, merely create a similar expression to refer to a similar situation. However, in mathematics, the Information Recycling Model, IRM, or Information Recycling Mathematical Model, IRMM is a canonised formula – a solution once worked for a problem, but may also be used to solve another problem. It may not be surprising that the expression even shows up in quantum physics (Haine et al., 2015).

EVALUATION AND RECOMMENDATION: The scientific and the everyday interpretations do not get mixed up, their nature/roots are also shared. We expect that the frequency of the occurrence of both types will increase.

References:

- Wu, Y. – Watanabe, T. (2011): Information recycling for social creativity. IEEE Proceedings, 2011 3rd International Conference on Awareness Science and Technology (iCAST), 81–88.
- Haine, S. M. et al. (2015): Heisenberg-limited metrology with information recycling. Physical Review 91 (4).
- Joachim B. és Karl-Heinz J. Page: <http://www.joachimblank.com/texte/BJ-brosch161004-b-eng.pdf> [2016-03-20]

Information religion

1. ~ the Missionary Church of Kopimism, registered as an official religious community in Sweden in 2012, is built on the tenet that the flow and sharing of data and information is free and inviolable.

Expressions used with the same, or very similar, meaning: Kopimism

Expressions from related concepts: computational theocracy

Which category? Seemingly the categoric basis of a new type of religion, actually, only a parodistic term.

The phrase in the language system is only present as the individual marking of the church of Kopimism, but often, it is not even used in this discourse.

2. ~ a deep, almost mystical fanaticism for information phenomena. An unwavering belief in the important role and progressive force of information and information technology in contemporary culture.

Expressions used with the same, or very similar, meaning: information fan, information junkie, infomania

Antonym(s): information avoidance, information diet, information Ludditism, information criticism

Expressions from related concepts: information Nirvana, information utopia, information socialism

Which category? An everyday expression with a high stylistic value.

The phrase in the language system is suffering from contradictory interpretations.

1. The Missionary Church of Kopimism, 'Det Missionerande Kopimistsamfundet' came out of the milieu of illegal 'pirate' filesharing sites and the political mini-parties that grew on them. (The legendary 'The Pirate Bay' torrent site still works under the auspices of the church). Led by two young university student, philosopher Isak Gerson and economist Gustav Nipe, they became a registered denomination after two years, and today, almost the faithful number around ten thousand.

The name of the church comes from the expression 'copy me'. 'Copimists' believe that all information is free and is to be disseminated freely, their teachings incarnate the legendary call to arms of the early age of the Internet (information wants to be free). Copyright laws are the evil, as they hinder free sharing (may it be texts, music, movies, or software). They do not believe in the supernatural,

their sacral symbols are ‘Ctrl+C’ and ‘Ctrl+V’ (copy and paste). Their commandments include the following: Copying of information is ethically right; Dissemination of information is ethically right; Copymixing is a sacred kind of copying, more so than the perfect, digital copying, because it expands and enhances the existing wealth of information. The Internet is holy. In our belief, communication is sacred. Code is law.

2. In its ‘everyday’ sense, information religion is a phrase of slight loathing that sceptics of the information revolution use for those whom they think distort discourses on the real issues of the information age with their extremely exaggerated opinions. This strong critical position is against “the mountains of exaggerations produced by salesmen of the computer revolution, drum majors of artificial intelligence, data traders, and IBM clones”, says Michael Dolan.

Opponents of information religion were inspired by the technology critique of Neil Postman (1931–2003), while the best known representative of the thought became Theodore Roszak (1933–2011), who published about the dangers of the “cult of information”, and the over-hyped role of information in culture, and primarily, in education. Since the death of Roszak, many thinkers and publicists have attempted to cover this critical role, most prominently Nicholas Carr and Jevgenyij Morozov.

Malcolm Dean has an opposing relationship to the concept of information religion when he suggests that we should approach jobs important for personal communication relationships with piety and veneration. Representatives of the productivity religion are not interested in owning the necessary information, but in employing the cheapest workforce possible. If the ‘information religion’ were the opposite, numerous failures of knowledge management would be avoidable.

EVALUATION AND RECOMMENDATION: The Copimist religion seems to be an activist performance that, ingenious as it may be, will sooner or later lose its steam and find the best ways to draw attention on other platforms (there already are some signs for this, although believers celebrate more and more Copimist weddings). The issue with the very public information critical position is that it builds the frame for its criticism from randomly chosen, tabloid-like ideas regarding the information age, therefore it does not debate with well-founded social theory theses, but arms itself with extreme ideas. This way, it typically creates similarly extreme and hard-to-defend antitheses that do not aid meaningful discourse, but make it harder. If one takes Roszak’s emblematic book into their hand today, despite the respectable moral ideas it starts from, the ‘Bible of information criticism’, published more than a quarter century ago, often seems charmingly biased and naive. Nowadays, negative or positive meanings of information religion occur rarely, it did not become part of neither the public discourse, nor the literature.

Unless an influential thinker popularises it again, it will, sooner or later, fade away completely.

References:

Pirate Bay: <https://thepiratebay.cr/> [2015-01-22]

Copimist Church: <http://kopimistsamfundet.se/> [2015-01-22]

Roszak, T. (1986): *The Cult of Information: The Folklore of Computers and the True Art of Thinking*. New York, Pantheon Book

Bogost, I. (2015): *The Cathedral of Computation*. We're not living in an algorithmic culture so much as a computational theocracy. January 15.

<http://www.theatlantic.com/technology/archive/2015/01/the-cathedral-of-computation/384300/>

Dean, M. (2002): *Wall Street Falling*, August 5.

<http://dougengelbart.org/colloquium/forum/baohs-talk/0208/msg00020.html>

Information repository

~ a coherent, constantly expanding information set that is stored on multiple servers for archiving, security, and access support reasons that also offers a unified search and download interface for users connected to the system.

Expressions used with the same, or very similar, meaning: digital library, information depot, information warehouse, information safe, information vault

Expressions from related concepts: information storage, information retrieval

Which category? An information science term used to refer to machine data processing.

The phrase in the language system is often used without the information attribute, referring to any (even predigital) stored collections.

Repositories (using the well-diffused Latin noun ‘repositorium’) were the collections of written knowledge, edited based on various organisational criteria in the Gutenberg galaxy, that members of a user group could trust.

Computers opened various new opportunities for the creation of comprehensive information warehouses. Information repositories specifically are organised for the safekeeping and wide-ranging, yet centrally controlled accessibility of information that is not primarily used, but is valuable and worthy of keeping. These information repositories contain metadata along with the deposited data. When uploading the information, the system controls whether an identical file exists, and if yes, duplicates are deleted. Not only text documents are stored in the warehouses, but images and videos, as well. The user who attempts to access the information can run a search that can also be narrowed down based on the format. Password protection or other security measures are often utilised in order to keep data uncorrupted and to avoid system misuse.

For the storage of a large quantity of data and processing the search requests, an exceptionally strong IT system is required. In order to avoid data loss, warehouses are served by multiple computers, making security backups continuously.

Typical requirements of an information repository include the following:

- The storage and indexing of various pieces of digital content (text, image, audio, video)
- Easily accessible data uploading and downloading for authorised users
- Searching to be filtered as required
- Protection against external threats
- Setting various levels of user authorisations, managing users

EVALUATION AND RECOMMENDATION: Regarding information repositories, many recent articles were published that consider ‘simple’ repositories obsolete, primitive forms compared to the next-generation developments with even more value-enhancing services, linked collections, interoperability, and service centeredness. As the ‘semantic Web’, the ‘digital library’, and ‘Big Data’ become more and more popular and the integration of digital collections from vastly different origin points into single on-line platforms, the expression itself is starting to fade.

References:

Wise Geek: What Is an Information Repository?

<http://www.wisegeek.com/what-is-an-information-repository.htm> [2015-01-22]

Effective Engagement: Information Repository.

<http://www.dse.vic.gov.au/effective-engagement/toolkit/tool-information-repository> [2015-01-22]

Underwood, J. D.: How to Develop a Competitive Intelligence Information Repository.

<http://www.dummies.com/how-to/content/how-to-develop-a-competitive-intelligence-informat.html> [2015-01-22]

Information request

~ a communication act that prepares for a future business or administrative step, by aiding the initiator in getting the variables that influence decision-making regarding the transaction(s) in a unilaterally or mutually beneficial way from the future partner itself.

Expressions used with the same, or very similar, meaning: information gathering

Antonym(s): hidden information

Expressions from related concepts: customer relationships, preliminary orientation, information games

Which category? One of the rare members of the information family of words that remained a completely everyday expression.

The phrase in the language system occurs very often, its use is defined by the uncertainty of being written separately or together.

A typical event in the world of customer relations is the initiation of information exchange between the seller (provider) and the buyer (requester) regarding the future transaction: the buyer gets informed about the product and the service, the seller gets informed about the buyer's personal data, preferences, and needs. One peculiar type is when the seller initiates information request of the buyer (for example on a form or a website). Public administration may also be considered a service provider; a request for information is often a demand. And the citizen may request public information in the name of freedom of information.

Today, information requests are usually made on-line, on the Web.

From the top 3 most common adjectives used with information requests (urgent, free, and preliminary), the last one is a tautology: the point of information requests is preventing latter steps.

The expression is not only used, it is even on the way of formalisation. There is a separate category among letter sample collections, the information request letter, and actors with strong customer relations are supported by their business support companies with product information request sheets. A standard procedure was developed for handling information requests in the higher-value, therefore more risky b2b (business to business) relationship; a structured Request for Information (RFI) form that permits comparison of supplier products.

EVALUATION AND RECOMMENDATION: the expression is visibly becoming independent to cover a class of meanings, ousting alternative interpretations.

References:

Request for Information (RFI) Summary of the Training Industry Page

<http://www.trainingindustry.com/wiki/entries/request-for-information-%28rfi%29.aspx> [2016-02-12]

Information retrieval

~ an activity that is aimed at getting relevant information efficiently from a collection, created with the goal of storage, and organised to some extent. Searching can be based on metadata or the entire text. The process of information retrieval encompasses information gathering, interpretation, storage, organisation, reaching, manipulation, and presentation.

Expressions used with the same, or very similar, meaning: information seeking

Antonym(s): archiving

Expressions from related concepts: information management, information operations, information processing

Which category? A technical term in the world of machine information processing.

The phrase in the language system still has its original, pre-digital meaning, in the sense of ‘turning to information kept in books and dictionaries’.

Many ideas were floating around for automatically searching text archives and to make accessing large amounts of stored knowledge easier even at the dawn of computer culture, the 1950s.

Information retrieval systems and services are well diffused today, used by millions in the course of their everyday activities. On-line search platforms such as Google, Bing, and others, are the most popular and most used information retrieval systems. They offer an immediate connection to up-to-date technical information, finding people and places, collect news and events, and make shopping easier by comparing products. Digital library systems aid scientific researchers in learning about the newest magazine articles and conference presentations of their field. In corporations, company search systems serve as storage for e-mails, memos, technical reports, and other business documents, therefore a shared memory is created, and the knowledge in the documents becomes accessible to company workers. Tabletop search systems make it possible for users to search among their personal e-mail, documents, and files.

Information retrieval systems do not tell the user about the subject of the study, only about the existence and whereabouts of the sought information. The word ‘information’ in ‘information retrieval’ is somewhat deceptive, as in the course of the search, metadata are used: the source where the sought information is found.

Information retrieval has four main parts:

- identifying the subject of the search

- finding the place of the object in a guidebook that leads the user to one or more documents
- finding the documents
- finding the desired information inside the document

The performance of information retrieval systems is generally evaluated based on their efficiency and success rate. Efficiency is measured in time (query/second) and space (byte/document). Measuring the success rate is more complex as it completely depends on human judgement. A document is generally considered relevant if it satisfies the information needs of the person looking for it.

EVALUATION AND RECOMMENDATION: A clear phrase in the library and engineering worlds of information, a part of the basic vocabulary. In some languages, the 're' prefix is often left off, although there is an important difference between search and retrieval.

References:

- Büttcher, S. et al. (2010): Information retrieval. MIT Press
<http://www.ir.uwaterloo.ca/book/01-introduction.pdf> [2015-01-16]
- Foskett, D. J. (1963): Classification and indexing in the social sciences. 6.
- Kemp, D. A. (1988): Computer-based Knowledge Retrieval. Oxford, Aslib. 1.
- Rijsbergen, C. J. (1979): Information Retrieval. 2. London, Butterworths. Online 1999. 1.
<http://www.dcs.gla.ac.uk/Keith/Preface.html> [2015-01-16]
- Singhal, A. (2001): Modern Information Retrieval: A Brief Overview
<http://singhal.info/ieee2001.pdf> [2015-01-16]

Information revolutions

~ an explosive development in the technology and culture of information management, with close links to definitive social changes through a complex weave of causality.

Expressions used with the same, or very similar, meaning: communication revolutions

Expressions from related concepts: information society, information age, information history

Which category? An (information) history quasi-term with a very divisive content, yet it may be considered a meaningful and necessary conceptual reflection on a type of phenomenon ready to be grasped.

The phrase in the language system is very popular and well diffused, used in numerous contexts.

The works of Canadian author Harold Adams Innis burned the fact that global history has a very considerable information history aspect into public consciousness. Historians have, since the early 90s, been discussing whether this is part of an even more comprehensive dimension in information history. Finally, the experience of shock-like changes in the information universe travelled with an eye to cultural history, and that this deserves serious reflection, is due to the appearance of the Internet and, as such, experiencing a doubtlessly powerful new quality of information management. The phrase's first occurrence dates from 1961.

The way towards calling large information changes, information jumps 'revolutions' had certainly been paved by the fact that it went from the dictionary of political history (where it meant the quick social changes in control-division-power structures, and the micro-history of social conflicts that complete this) to a more comprehensive and abstract conceptual space. From here, using it for jumps experienced in information management, storage, and multiplication was only a small step.

The retroactive analysis of information revolutions has two particularities. The first is technology-centeredness (that very often turns into technological determinism, considering new systems of information technology to be forces that cause necessary social changes). The other is the question of the number of information revolutions. There typically is agreement in that articulated language was the first revolution, and the development of writing, the second. Also, there is little doubt that the contemporary digital revolution is the last one, with the Internet's more complex and higher system quality than anything before (Whitney-Smith, 2014). How many revolutions there were between the second and the last,

and whether we only consider the printing press, or also consider mass press as another element compared to books, and whether we consider the worlds of telegraphy, telephone, radio, and later, the television, and the revolutions of visual media and images (photography and films) – well, depending on how much of a jump the various experts consider a revolution and why, there are various numbers going around in the literature of the issue.

The various theories have a ‘deviation’ between three and eleven – but in the meanwhile, the discourse moved to a more complex direction, that attempts to describe the entire information ecosystem change embedded in society as a revolution.

Canadian Leonard Dudley (2008), for example, uses the control method of the information ecosystem as the basis of eras when reviewing Western information revolutions, instead of the technologies. Accordingly, he considered the Carolingian Renaissance a contractual information revolution; the Renaissance, a consensual one, and modernity, starting with Gutenberg, a pre-emptive information revolution. In his work, the prescriptive information revolution comes with the era of big news factories, then with the creation of information society, the ‘repeated contract’ information revolution age.

And there is an even more comprehensive viewpoint. Szathmáry and Smith (1997) start from the idea that “from the first replicating (multiplication by copying) molecules through simple cells and multi-cell organisms, all the way to human societies...the way of information transfer has changed multiple times”, and these changes made the evolution of the level of complexity possible. They follow the history of the “large steps of evolution” all the way to the creation of human language (the special ability that makes inter-generational information transfer possible), and they pass the baton here, at the eighth information revolution of evolution, so that, with a re-count, language can become the first on the social history timeline.

EVALUATION AND RECOMMENDATION: The plural form of the entry is justified as more than 90% of occurrences use it this way, emphasising that the systemic level of the concept is not the description of ‘some’ information revolution, but all of them; the comprehensive description of information revolution as a (social) macroevolution phenomenon. And even though new, important theories, with different classifications may be expected, the phrase will likely stay popular for a long time.

References:

- Whitney-Smith, E. (2014): Whitney-Smith, Elin: Hunter/gatherers to Digital Natives. Six Information revolutions.
<http://information-revolutions.com/> [2015-03-26]
- Leonard D. (2008): Information Revolutions in the History of the West. Cheltenham, UK: Edward Elgar.
- Szathmáry, E. – Smith, J. M. (1997): The Major Transitions in Evolution Oxford University Press

Information richness

~ the internal characteristic and ability of information to cause a change in meaning and understanding in a given time. The faster the process and the more definitive the change is, the richer and more potent we can consider the piece of information.

Expressions used with the same, or very similar, meaning: information value, perfect information

Antonym(s): pseudo-information, quasi-information

Expressions from related concepts: information density, information transfer, communication efficiency

Which category? Information science term.

The phrase in the language system can only be made clear by a supplementary, comprehensive explanation.

Information richness theory, published as a handbook in 1986 (Daft and Lengel, 1986), but in fact, developed years earlier (Daft and Lengel, 1983) is meant to aid the understanding and improvement of the organisational information concept. Researchers at the University of Texas wanted to know how much the medium, the channel that it passes through, defines the success of information transfer, the meaning change occurring in people's heads. This is why they later chose to use the less accurate Media Richness Theory (MRT) name.

According to the theory, the components of information richness are multiple pieces of information transferred in parallel, fast feedback, the ability to create a personal focus, and the presence and use of natural language in comprehension.

It is no wonder that based on these criteria, authors find face to face communication (f2f) to be the richest in information, followed by video conference calls, then telephones, and in the end, the information-poorest media, corridor posters.

Naturally, this theory is characterised by its approach from the direction of organisational communication efficiency, and its age from way before the computer and network revolution. After numerous attempts at use and development, the concept seems to part with its roots, there is more and more use without reference to the MRT, for example in the analysis of the information richness of healthcare services or regulatory documents (later: e-mails). Information management also improves its methods in order to better support the growth of information economy (for example with the 3C method: clarify, connect, combine (Spenner, 2010)).

The front line of information richness research today is not personal communication practices, but the latest generations of visual information presentation.

With up-to-date infographic solution, a very high level of information richness/time can be achieved, especially if the infographics are animated or interactive.

EVALUATION AND RECOMMENDATION: In multiple languages, there are no separate words for ‘abundance’ and ‘richness’, therefore it is hard to separate the expressions, often used in partially different meanings: the context must clarify which interpretation one is thinking of. This is especially important, as – as Verzola (2009) claims – both interpretations of information richness will become individual and powerful subjects, for researchers of more than economy and political science: especially astronomy, genetics, and digital philologists.

References:

- Daft, R. L. – Lengel, R. H. (1986): Organizational information requirements, media richness and structural design. *Management Science* 32 (5), 554–571.
- Daft, R. L. – Lengel, R. H. (1983): Information Richness: A New Approach to Managerial Behavior and Organization Design *Research in Organizational Behavior* 6:73
- Kahne, F. (2015): Dealing with digital information richness in supply chain management: a review and a Big Data Analytics Approach. Kassel University Press.
- Spenner, P. (2010): Managing Information Richness: Three Imperatives for Marketing Leaders. CEB Blogs, January 6.
<https://www.cebglobal.com/blogs/managing-information-richness-threeimperatives-for-marketing-leaders/>
- Verzola, R. (2009): 21st-Century Political Economies: Beyond Information Abundance. *International Review of Information Ethics* 10, 53–62.
<http://www.i-r-i-e.net/inhalt/011/011-full.pdf>

Information rights

~ in a narrow sense, a new family of fundamental rights created in the late 20th century by entering information self-determination and freedom of information into the Constitution. In a wider sense, every area of the legal regulations on the information relationships of persons and organisations in the private and public sectors.

Expressions used with the same, or very similar, meaning: communication rights

Antonym(s): information monopoly

Expressions from related concepts: data protection, information self-determination, freedom of press, freedom of speech, freedom of opinion, freedom of thought, free information flow

Which category? A high-level term, as a category, various fields and institutions of law belong to it, and is used as a strong technical term in definitions.

The phrase in the language system is known in an ever-wider range of people outside information rights experts due to efforts made to raise citizen awareness and loud actions for the freedom of information.

“Information freedom serves the requirement of government transparency, while data protection serves the protection of citizens’ private lives against the state and others (by others we mean public power and its institutions, the market, organisations, and even other citizens). Today, both values are building blocks of modern constitutional structures”.

These two pillars of information rights are also described in their own entries, but handling them together is also more than justified.

Information rights cover not only the relationship of the state and the citizen, but information relationships between individuals and organisations, customers and providers, and individuals among each other. The discourse on information rights is expanding in two directions: backwards in time (all the way back to 250 years ago, to the 1766 Swedish freedom of press act, the first document that codified the right to a knowledge of official documents) and to “basic laws” (freedom of opinion and the press, press laws, defamation – promoting false information and slander about someone, etc.). The other new dimension takes us beyond the legal sector: on the side of law, to the direction of culture and society, partially in the description and understanding of the mechanisms of action and causal relationships from which the way that obstacles to the realisation of information rights hinder ‘good governance’ may be clearly deduced. New information and communication technologies, on the one hand, make the realisation of informa-

tion rights easier, on the other hand, they also make it harder, as they, in general, question the applicability and enforceability of traditional legal categories.

EVALUATION AND RECOMMENDATION: The concept is not only a legal and civil rights category, but nowadays, it also is an important part of legal literacy or social knowledge, taught as a subject. Its visibility and frequency of use are expected to increase.

References:

Coppel, Philip (2010): Information Rights. Law and Practice Hart Publishing (3rd ed.)

S

Information scarcity

~ a systemic state with deep organisational causes: the problem is not access to existing information, but the lack of the existence of relevant information.

Expressions used with the same, or very similar, meaning: information dearth, lack of information, information deficit, information poverty

Antonym(s): information glut, information richness

Expressions from related concepts: information overload

Which category? A scientific term interpreted in a civilisation history conceptual framework.

The phrase in the language system could not diffuse in its scientific meaning, therefore it is used in unique interpretations, with the goal of showing a lack of information, instead of the more accepted phrases with the same meanings, in everyday situations.

Anthropology and history philosophy literature attempts to use the concept of information scarcity to describe the state in which the isolation of human communities, and the lack of permanent information carriers and signal multiplying techniques had made the rare and scarce nature of information as a resource the base experience and base state of learning. More exactly: the issue was not access to information necessary for supporting appropriate action, studying, and intellectual improvement; those were not available as they have not been made yet.

Compared to temporary or partial information droughts, information scarcity is a kind of 'natural' state. All this is strongly connected to the fact that it was rarely possible (and only in small numbers) to free those from production whose primary goal could have been the creation, acquiring, or sharing information. Information was made in personal live, in practice, and diffused only in a limited manner, in a network of direct relationships, with strong geographical and social limits.

In the mid-1800s, the number of workers who performed information-related activities was only a small percentage of society. In the United States, this number was then 4% but before the Millennium, more than 50% of gross domestic product came from information management (Shenk, 1997). Looking back from the late 20th century state that could be characterised by an information glut and infor-

mation richness, many analysts saw earlier eras as times of information scarcity. Undoubtedly, less information was available on less channels, even a couple of decades ago, but this is only a relative difference, and these uses loosen the original interpretation (as do all other ones where it comes up related to untrustworthy, currently available information).

However, the concept of information scarcity can be expanded analogically in cases where a profession or social group claims that instead of information necessary for navigation, making judgements and good decision, only pointless, useless sets are available. Thus ending this scarcity – i.e. the production or acquisition of relevant information – becomes necessary for appropriate functioning. Its use by representatives of various pieces of historical research for whom the scarcity of information necessary for the analysis of the geographic or social history past and appropriate reconstructions is an unpleasant characteristic (Rosenzweig, 2003).

EVALUATION AND RECOMMENDATION: The expression is diffused not only among information researchers, but among economy, education planning, and other experts, as well. However, its use is uncertain, it rarely follows the base meaning. As it is a scientific term, some clarifying debate may lead to its (more) exact use, naturally, always along with the family of related expressions, discussed in as much detail as possible.

References:

- Shenk, D. (1997): *Data Smog: Surviving the Information Glut*. Harper Collins.
Rosenzweig, Roy (2003): *Scarcity or Abundance? Preserving the Past in a Digital Era*. *American Historical Review* 108 (3), 735–762.

Information scent

~ the sum of linguistic and visual signs that the researcher can use for a lightning-fast evaluation of whether the network source contains the sought information, and how one may arrive there the fastest.

Expressions used with the same, or very similar, meaning: information spot, information foraging

Antonym(s): lack of information, information dearth

Expressions from related concepts: information hunt, search for information, information shadow

Which category? An ingenious term used in a general information science environment. It is not a technical term, but it paraphrases the phenomenon excellently.

The phrase in the language system is present in the vocabulary of information architects, other than them, in other uses, it is not used and not comprehensible.

The term ‘information scent’ had first been used in the 1990s by Peter Pirolli and Stuart Card in the Palo Alto Xerox research centre, later, Jared Spool and his team performed exciting research in the field.

When animals go out for food, they often pick a direction based on their sense of smell. Sniffing for smells that indicate the presence of prey is a typical behaviour type of predators. Information hunters on the Internet act similarly. On a new website, they start watching the images and text to decide, as quickly as possible, whether whatever they need may be found on the website. If they see a chance and stay, they will select the option with the clearest reference (the ‘strongest scent’), the one that takes them closer to the sought information.

Websites with a strong information scent lead the user to the content expertly. However, if the information scent is weak, the time necessary to analyse the options increases, and so does the chance of a bad decision.

However, the belief that after three ineffective clicks, the drive to leave the website grows is a mistaken one. In reality, information hunters go deeper and deeper, until they feel that they can get closer to their goal. When the information scent finally becomes weaker, and no result is expected, the user moves on.

Information scent is easily reinforced on a website, and at the same time, it increases the user’s chance to find the sought information, and the provider’s chance to keep the visitor. Web-design Apostle Jakob Nielsen compiled some directives for web designers that they can use to reinforce the information scent and faster interaction:

- Ensure that category descriptions refer accurately to what users will find in the target

- Do not use made-up words and their own slogans as navigation points
- Ensure feedback on where the user is in the website hierarchy

Nielsen recommends developers to develop their content as if it was a nourishing food that is easily digestible.

EVALUATION AND RECOMMENDATION: The term is made ‘tasteful’ by the fact that, out of all our senses, smell provides quick and easy-to-identify information regarding an environmental variable, thus despite the fact that information-seeking people act in a complex and abstract space, the metaphoric use of smell makes it possible to describe, capture, demonstrate, and immediately understand their behaviour. The fact that more and more people become curators of content as well as consumers makes its spreading a possibility.

References:

- Barker, I. (2005): Information scent: helping people find the content they want.
http://www.steptwo.com.au/papers/kmc_informationscnt [2015-01-20]
- Bradley, S. (2011): Keep People On Your Site With A Strong Information Scent
<http://www.vanseodesign.com/web-design/information-scent/> [2015-01-20]
- Information Foraging Theory Book Review: Boosting Information Scent
<http://www.websiteoptimization.com/speed/tweak/information-foraging/scnt.html> [2015-01-20]
- Word Spy The Word Lover’s Guide to New Words: Information scent
<http://wordspy.com/index.php?word=information-scent> [2015-01-20]
- Nielsen, J.: Information Foraging: Why Google Makes People Leave Your Site Faster
<http://www.nngroup.com/articles/information-scent/> [2015-01-16]

Information science/information scientist

~ an interdisciplinary field of science with an ever-growing meaning that studies all questions of the information-related family of phenomena and the related human activity which are outside the scope of mathematical-statistical information theory. Information scientists are researchers who study an aspect of the above scientific field.

Expressions used with the same, or very similar, meaning: information theory, information research, information studies

Expressions from related concepts: information philosophy, informatics, information systems

Which category? A descriptive term for a scientific discipline with numerous interpretations that do not cover each other perfectly.

The phrase in the language system is rooted, it forms part of the names of institutions, journals, and professional organisations, although it is hard to identify its exact meaning among the names of related disciplines that also contain the word ‘information’ for laymen.

British library expert Jason Farradane (1906–1989) started to first use the phrase ‘information scientist’ in the early 1950s, then, from 1955, ‘information science’. The birth of the concept reflected the drive in library science to create a conceptual bases with a high level of abstraction for the information universe behind its own practice. Therefore its early definitions focused on typical library processes (information analysis, collection, selection classification, management, storage, warehousing, compression, search, and use). The library and information science hybrid that is used to this day was created around this time, – at the same time documentation science and later, archival science also signalled their rightful claim to belong to information science. And as communications science and media science, also created in the 50s, also studied the various forms of information flow, diffusion, and consumption, definitions became more and more comprehensive. Library information is replaced by “various types of human knowledge and ideas, scientific and artistic works”, magazines and books, by “any knowledge carrier”, libraries, by any “information organisation”, and the process from processing to searching by “the entire lifecycle of information” and its management. And as the digital platform and network accessibility made the ‘information raw materials’ of different sources similar, information science, by the Millennium, got quite close to the theoretical fields of corporate information management, and becoming somewhat contourless, occasionally melts in the categories of “content industry” and “knowledge management”.

Information science has been in a similar situation before, when, at the advancement of computers (due to the accelerating computerisation and automatization of information processes) it got into the conceptual pull of computing science. And as technology changes rapidly (consider the Internet itself, mobile devices, keyword searches, the semantic Web), the emergence of computer information processing and putting them in the centre started to narrow down the concept of information science again.

We believe that by now, the interpretation of information science has developed even further, and information activities performed by information experts were joined by “a comprehensive study of the information behaviour of persons and communities”, while regardless of institution, carrier, and use environment, “it attempts to understand, uncover, and fully embed in science the phenomenon of information”. (In this sense, it comes in contact with information anthropology, information history, information architecture, cognitive sciences, brain research, or even artificial intelligence.) However, because of the ever more complex scientific environment, the subject and scope of information science leads to more and more debates, therefore many started to use the phrase ‘information research’. In higher education, exceeding traditional library science education, the name ‘information studies’ has diffused, where the goal is training “general” information experts.

EVALUATION AND RECOMMENDATION: The appearance of alternative names is a good signal that the conceptual pressure present at the birth of the expression did not cease, and scientific fields that centre on information, but interpret it in different disciplinary fields, the dynamic requires repeated clarification, refreshing the meaning, and a conceptual reorganisation.

References:

Farradane, J. E. L. (1955): Professional education of the information scientist. In *Congres international des bibliotheques et des centres de documentation*, Brussels, 2B, 76-81. The Hague, The Netherlands: Martinus Nijhoff.

Information security and safety

~ the protection of information and information systems from unauthorised access, use, publishing, distraction, modification, appropriation or damaging of the devices that operate the system, and environmental damages, in order to ensure the confidentiality, integrity, and accessibility of information.

Expressions used with the same, or very similar, meaning: information assurance, computer security, information protection

Antonym(s): information anarchy

Expressions from related concepts: data security, information value, information management

Which category? A technical term in the world of information system administrators, but for users, it has a clear meaning in everyday contexts.

The phrase in the language system rarely exists outside technical jargon; it is often encountered in job advertisements and news articles.

In the '70s, computer network use spread in business, and the term "data security" appeared along with it. After a number of years, people realised that information held in the data was the value that was most important to defend, and emphasizing this, data security was replaced by information security in the mid-80s. (And although "information protection" is a usable synonym, "data protection" means something entirely different now: the legal protection of personal data).

Information security has a process nature that demands continuous attention: information and information systems must be protected with due care and attention, including constant training, evaluation and observation, improving responses, development, documentation, and review. Inside the organisations, the triad of confidentiality, integrity, and availability (CIA) serves as a guide to sustain information security. The three elements of the model also the three main pillars of security. In this sense, confidentiality is a series of rules that limit information access. Integrity ensures the authenticity and accuracy of information. Availability ensures the reliable accessibility of information, that it is accessible only for authorised people.

The three pillars of security – physical, logical, and production security – serve as the CIA realisation criteria. Physical protection of the device park operating the information system – computers, drives, network devices – is part of physical safety (e.g. the access control system of the computer centre, anti-theft devices on the computers; bars, doors, etc.). Production safety is responsible for environmental requirements (e.g. A continuous electric supply, air-conditioning, appropriate protective equipment, a safe work environment, etc.) that make safe operation

of physical systems possible. Everything else that we hear about these days (e.g. protection from viruses, hackers, data theft, unauthorised access and modification, unauthorised publication, etc.) is a part of logical security.

Any organisation that is present on-line has to depend on a group of information security experts in order to have their data in relative safety. It is an axiom that there is no 100% security, only minuscule risk. As soon as companies perform on-line actions, they become vulnerable to hackers. Information security experts work in the front line of technological development, so that they can continuously maintain the protection of the systems they are trusted with against unauthorised intruders. Furthermore, preparation of disaster recovery plans in case hackers manage to break through the defensive wall, or a number of servers go down because of a lightning strike, is also part of their job. They work on this in close collaboration with the employees of the building management and IT departments.

Information security is also crucial on the business and government levels, therefore inside the organisations, it is an area assigned directly to the top decision maker, led by the Chief Security Officer and the Information System Security Officer.

The Information Security Forum (ISF) was founded in 1989 as an independent, international, not-for-profit organisation with a number of Fortune 500 and Forbes 2000 members. Members of the Forum are dedicated to investigate, clear up, and solve key problems in the areas of information protection and risk management.

EVALUATION AND RECOMMENDATION: As the area is facing further growth, exceptional career opportunities are available for information security experts (an 11% growth is predicted for between 2014 and 2019), the phrase will undoubtedly become even better known.

References:

- Florida Tech University Online: Information Assurance Security Professional Career and Salary Profile.
http://www.floridatechonline.com/resources/cybersecurity-information-assurance/informationassurance-security-professional-career-and-salary-profile/#VKahDSuG_fI [2015-01-04]
- ISACA® Glossary of Terms.
<https://www.isaca.org/Knowledge-Center/Documents/Glossary/glossary.pdf> [2016-05-11]
- National Institute of Standards and Technology: Volume I.: Guide for Mapping Types of Information and Information Systems to Security Categories. (SP 800–37; SP 800–53; SP 800–53A; SP 800–18; SP 800–60; CNSSI–4009; FIPS 200; FIPS 199; 44 U.S. C., Sec. 3542)
http://csrc.nist.gov/publications/nistpubs/800-60-rev1/SP800-60_Vol1-Rev1.pdf [2015-01-04]
- Sherwood, J.: Historical Background: Information Assurance.
<http://www.sabsa-institute.com/members/node/19> [2015-01-04]
- The 2013 (ISC) Global Information Security Workforce Study.
https://www.isc2.org/uploadedfiles/isc2_public_content/2013%20global%20information%20security%20workforce%20study%20feb%202013.pdf [2015-01-04]
- Whatis.com: confidentiality, integrity, and availability (CIA triad)
<http://whatis.techtarget.com/definition/Confidentiality-integrity-and-availability-CIA> [2015-01-04]

Information seeking

~ a process or activity in a human, information institution, and computer/technological environment that is concentrated on information gathering. A special case of problem-solving, it involves the recognition and analysis of the information problem, creation of a research plan, execution of the research, evaluation of the results, and if necessary, repetition of the process (even cyclically).

Expressions used with the same, or very similar, meaning: information foraging, information retrieval

Antonym(s): infophobia

Expressions from related concepts: machine search, search engines, semantic Web

Which category? A term that, with time, went from library and documentation science term to general information science term.

The phrase in the language system is very commonplace, both in its everyday and professional meanings.

Information seeking, at its simplest, means searching for, extracting, recognising, and utilising useful content. We can consider it a cognitive task, social and cultural exchange, a discrete strategy to eliminating uncertainty, or a basic characteristic of every person. In this case, we can discuss it as a goal-oriented ‘information seeking behaviour’, the sum of the active and passive forms of behaviour aimed at the use of information sources and channels (Wilson, 2000).

During its history, humanity has created various forms of knowledge transfer institutions, organisations, experts, and methods in order to make information searches more efficient; for centuries, the library was the most important of these.

Librarians had to face a series of challenges when the Internet appeared, as they had to move from traditional search techniques (e.g. the various classifications; i.e. bibliographic, referring, etc.) and the long-perfected, human added value-based search support functions to machine and automated solution-supported practices in the on-line information search environment, decades before the Internet became a mass phenomenon.

This was the golden age of modelling. The difference between the major models was typically the number of sub-tasks they used and the search strategies allocated to these, and whether they were built on cognitive or dynamic (modifiable while execution) frames.

The Internet became a mass cultural phenomenon in parallel with the development of on-line search systems (search engines). More and more complex

background systems joined the earlier skills and practices, these typically support the first part of the search cycle: detailing the question, analysing the gained information, and to a certain extent, the re-formulation of the question. There is an incredible research and development arsenal focused on semantic machine solutions, yet it is still important to consider the users of the search services, and information seeking behaviours.

For the Google generation, six strategies are described: horizontal (the searcher starts from a site, then follows various links without returning to the original site), navigators (who spend their time finding the direction to start at), the visitor (who click on sites mentioned in the used text, and spend typically between 4-8 minutes there), the hoarder (who download every accessible document, that they will never need or read), the controller (who evaluate the validity and accuracy of the sources), and the different, sporadic, or mixed forms.

EVALUATION AND RECOMMENDATION: The expression is perfectly 'in its place', its use is clear.

References:

- Kingrey, K. P. (2002): Concepts of Information Seeking and Their Presence in the Practical Library Literature. *Library Philosophy and Practice* 4 (2).
<http://www.webpages.uidaho.edu/~mbolin/kingrey.html> [2015-01-06]
- Kuhlthau, C. C. (1991): Inside the search process: Information seeking from the user's perspective. *Journal of the American Society for Information Science* 42 (5), 361–371.
- Wilson, T. (2000): Human Information Behaviour. *Informing Science* 3 (2), 49–55.

Information services

~ the satisfaction of a specific (corporate) information need using an external resource that creates a special class of economic actors.

Expressions used with the same, or very similar, meaning: information broker, infomediary

Antonym(s): information work carried out by an internal information division

Expressions from related concepts: information entrepreneur, information goods, information market(place), information value chain, information economy

Which category? A descriptive economic science term, but its professional use is more common than the scientific one.

The phrase in the language system is strongly present, but with many inconsequent, partially contradictory individual occurrences.

The generic definition of service is somewhat misleading when the definition of information services is approached from this direction. According to widespread textbook formulas, the point of the idea is the satisfaction of a need of the customer/user, by producing and trading non-material goods (this is why the service sector is also called the tertiary sector, compared to the secondary production and the primary sector that provides raw materials).

Therefore information services are a separate category instead the class of services, but there are a number of issues with them. Information as a commodity behaves differently from other types of goods in a part of cases, as only pieces of information can enter the flow of information which was produced somewhere, processed, and on which operations have been performed. The problem is not solved by naming the information sector the quaternary sector (as many do), because in that case, we sooner or later end up in an infinite classification hamster wheel. Therefore it is better to construct the meaning of information services from a historical and practical side.

As for the beginnings, that was partially the world of mediation between isolated producers (price information, authenticating payment methods, currency exchanging, money lending), and partially the birth, more or less at the same time, of hierarchy and ruling order that, using resources taken from the members of society, could easily produce specialists from productive work whose expertise was needed to satisfy information needs. Information competence was built up “in house”, if you will (this is how the scribe became one of the symbols of ancient Egypt), therefore the market for information services was only created when a specialist offered some sort of information to multiple customers, or a customer purchased information from multiple specialists. In other words: for the market

or community actor (guild, manufacture, a city community, a royal court) that required information, it was worthwhile to utilise outside resources, and for specialists, it was worthwhile to sell their services to multiple customers. In Renaissance Florence, we may already find an expansive information marketplace where land surveyors, interpreters, scribes for hire, money exchangers, accountants, and spies offered their services to whomever paid them.

In the United States, the information market had picked up since the early 1700s (Chandler and Cortada, 2003), the first occurrence is from the New York Times in 1885, but a big push came from the growth of the size of companies and organisations, then the growth of the information universe and the number of technologies behind it. We find more and more information activities that are worth outsourcing, and thus, more and more information service providers can find their own places in the inter-organisational space. In the end, the secondary market of information services is created, when even the information supplier outsources parts of its operations, and they get information suppliers on their own.

EVALUATION AND RECOMMENDATION: Nothing suggests that the number of operators in the real economy who make their living from information service provision – either companies or “intellectual small producers” – will not increase, and their richness of form will not increase in the next decade. This way, classification polemics will likely come to life, but we will encounter the expression even more often in the public discourse.

References:

Chandler, A. D.– Cortada, J. W. (2003): *A Nation Transformed by Information: How Information Has Shaped the United States from Colonial Times to the Present*. Oxford University Press.

Information shadow

~ the digital presence of a physical object: all the data needed for a reconstructible picture to be 'built up' virtually, and all the data that refers to the object in some context, or is related to it.

Expressions used with the same, or very similar, meaning: digital representation, digital footprint

Expressions from related concepts: Internet of Things, information footprint

Which category? A term that refers to a recently identified phenomenon that is also used in professional and everyday discourses, in a less correct way.

The phrase in the language system is strong among scholars of the Internet of Things. The imported “national” versions are negligible and mostly incorrect.

It is one of the terms that were invented not by a single person, but by an entire research community. It is more or less as old as the phrase ‘Internet of Things’; born before the millennium. Its existence is due to real, physical objects that appear on the Internet after people and digital objects. And all this means not only connection (e.g. with the IP address of a household appliance), but a type of “digital existence”. An object’s information shadow comes together from everything that is digitally known, acquirable, construable about a given object.

A characteristic of information shadows is that with their help, the characteristics of an object – its place of existence, size, weight, status, age, etc. – may be examined without getting in physical contact with it for even a second. The relationship between the physical object and its information shadow may either be asymmetric or symmetric, based on how much we can learn about it through the Internet: the more we may learn, the more symmetrical the relationship is. The most obvious use of the information shadow is in the world of industrial Internet: products receive their individual identification marks on the factory line, and they remain easy to follow after getting into retail. After this, post-purchase use data, or failure and service data start to gather: the information shadow becomes analysable, and it may even be fed back into product development.

As the concept became more and more popular, and people started to use it for other objects, as well: for example, a book that has information shadows in multiple spaces, not only the publisher’s, author’s, or distributor’s (Amazon, Google Books, or physical bookstores) website, but also on blogs, publishing sites, or even private entries. What about books that exist only as e-books to start with? Their information shadow can be analysed in a similar way. The concept has grown to encompass digitally created objections – i.e. songs from various music streaming and downloading websites (iTunes, YouTube) also have information shadows.

EVALUATION AND RECOMMENDATION: Unfortunately, because of the popularity of the phrase, a number of authors started to extend it to people, i.e. users of the network, as well. This step seems logical, as everything that can happen to a physical or digital object can also happen to a person on the Internet. However, by the time, there already was an accepted phrase for this: digital footprint. Therefore shadow and footprint may only be used together in a sensible way if they are used to refer to different phenomena. We trust the clarification process.

References:

O'Reilly, T. – Battelle, J.: Web Squared: Web 2.0 Five Years On.

Kuniavsky, M.: Smart Things: Chapter 6, Information Shadows, Part 4: the Internet of Things
http://www.orangecone.com/archives/2010/06/smart_things_ch_11.html [2015-09-27]

Information socialism

~ an alternative to information capitalism, a social formation that is organised by the community logic that takes the place of the capital logic.

Expressions used with the same, or very similar, meaning: info-utopia

Antonym(s): information capitalism

Expressions from related concepts: information public good, post-capitalism, cyber-Marxism

Which category? It did not become a term in the literature of political theory, it is only used by a few, usually in critical social science workshops, as a professional-public term.

The phrase in the language system is not on the way to spreading, other expressions are expected to take over the carried content.

In 1996, Rob Kling used the example that while in information capitalism, private companies make money from state data produced from taxes, while in information communism, these are public goods, to be used by anyone for free to reflect on the difference between the two.

Since then, it was realised that changes that promise the possibility of superseding information capitalism, or at least a number of its subsystems, are growing much deeper and on a much larger surface. The cooperation of equal volunteers with no direct remuneration is more and more definitive in creating ‘intellectual public goods’, from developing open source software to content building on wiki platforms and blog creation to citizen science projects. It seems that numerous islands of digital economy were created where commons-based peer production networks are proven and experienced to be more efficient than market-regulated corporate organisations and owners’ interests. In his 2006 book ‘The Wealth of Networks’, that recalled the political economy classic of Adam Smith, Jochai Benkler demonstrated the contours of this new world. The big question of the near future is whether these islands will ‘meet’. Will sharing economy, money substitutes, more societal control over business processes, the advancement of ethical (green and blue) economy, and placing all this in the word of IoT (the Internet of Things), paired with the new world of automatization, robotization, and virtualisation, reinforce the patterns of information socialism?

EVALUATION AND RECOMMENDATION: After the decades of “Real Socialism”, ‘information socialism’ seems a bit bizarre. And as it is meant to embody the combination of various phenomena as an umbrella term, the phrase that is already

only usable carefully, in a few contexts will likely be forced out by competing phrases and alternative solutions.

References:

- Kling, R. (1996): *Computerization and Controversy: Value Conflicts and Social Choices* Morgan Kaufman.
- Benkler, Y.. (2006): *The Wealth of Networks: How Social Production Transforms Markets and Freedom*, Yale University Press.

Information society

~ a statistically measurable shift in the internal structure of production, work, and consumption towards the information and knowledge sector, information and knowledge work and consumption of information and knowledge goods, that all subsystems of society adapted for at a fast pace.

Expressions used with the same, or very similar, meaning: information civilization, post-industrial society

Antonym(s): industrial society

Expressions from related concepts: information culture, information-centred world-view, information age, knowledge society

Which category? The term, born as part of the scientific reflection on the macro-level changes in society has made it to the everyday-popular (and simultaneously, ever less defined) use after the Millennium.

The phrase in the language system has undergone a change in meaning that confuses meaning.

The birth of the expression takes us all the way to Japan: it was first used in the ‘joho shakai, johoka shakai’ form in the 1961 conversations of famous architect Kisho Kurokawa and renowned historian-anthropologist Tadao Umesao. It was first used in writing as the title to a study in January 1964: although it was primarily written by Jiro Kamishima, the title was suggested by editor Michiko Igarashi: *Sociology in Information Societies*.

However, by this time, debates already took place and works that identified and described the phenomenon were already published in the United States, only that the emerging, paradigmatically new social formation was not called the information society yet (instead, its name was post-industrial society or white-collar revolution). The creation of this concept attempted to reflect on the deepest point of social changes that happen in front of our eyes. More and more people noticed even before the mid-20th century that the developed world was slowly superseding the era called the industrial revolution, that had radically and deeply changed the structure of everyday life, the nature of economy and politics, the world of work, institutions, science, and media. The subsequent new, different, post-industrial state that replaced industrial society was meant to signal a new stage of the unstoppable civilizational transformation, but in the end, the message hidden in the ‘information society’ phrase that had solidified relatively quickly only asserts how one quality changes into the other.

All this is simultaneously frozen into the most widespread metaphor of information society, Alvin Toffler's "third wave" phrase, but as a good idea, it is also suitable for understanding numerous further characteristics. If the agricultural revolution was the first big civilizational "wave", and after its millennia, came the centuries of the second wave, the industrial revolution, these are the decades of the third wave: at least at places where the wave really arrived, where it made it geographically. Therefore it is not necessary and unavoidable for it to get everywhere: there are countries in the middle of their own industrial revolutions, there are some preparing for the second wave, getting industrialised, and some deep in their own first wave that are still far away from industrialisation.

The concept of the global information society expresses the worldwide spreading of the process. After the Millennium – mostly because of the phraseological inconsistency of the languages of politics and the press – information society was often associated with 'a lot of information' or 'information technology', and used simply for the 'information-rich era we live in'. This effects science, as part of the conceptual criticisms of information society reflect on this narrowed-down and misleading interpretation.

EVALUATION AND RECOMMENDATION: The expression 'information society' has no alternative, but the scientific community can have a considerable effect on cleaning it up from added secondary meanings so that uses that reflect its original social theory depth may overcome.

References:

- Z. Karvalics, L. (2008): Information Society – What is it, exactly? (The meaning, history and conceptual framework of an expression) In: Information Society. From Theory to Political Practice (Ed. R. Pinter) Gondolat – Új Mandátum, Budapest, 2008 p. 29-46.

Information space

1. ~ according to the most common interpretation, the entire mass of information available on a given subject, that may be mapped in an abstract "space". Other definitions consider this to be the entirety of information available (on-line), regardless of its subject, or even disorganised. According to a further approach, the information space opens up when a user starts an active search for information, thus information spaces are merely the surfaces we scour.

Expressions used with the same, or very similar, meaning: information fortune, information ecosystem, information stock

Antonym(s): information implosion

Expressions from related concepts: information footstep, information public space, information panopticon

Which category? It is used in a self-governing way, without clarifying the concept appropriately, supposing an obviousness of the meaning in professional discourses, therefore for now, it cannot become a technical term.

The phrase in the language system appears occasionally, rival uses do not reflect on each other.

2. ~ a name of British researcher Max Boisot's model (theory) that organises knowledge flow and its calcified outcome types, fixed as a proper noun.

Expressions used with the same, or very similar, meaning: knowledge types, knowledge transfer, social learning

Expressions from related concepts: information ecosystem, corporate information systems

Which category? An information and knowledge management term.

The phrase in the language system is used in this sense exclusively as part of the Boisot reception.

1. When information takes on a material form, it becomes a physical being (for example, in the shape of printed books). It is easy to get an image of quantity when we guess the size of a shelf full of books or a library. However, in digital culture, not only quantity, but place of storage and the relationship of the individual pieces of information to other pieces of information are impossible to measure

this way. The various definitions of information space all reflect on this situation, although they put the emphasis on different aspects. Therefore these are not really rival approaches, they do not argue with each other, but use the abstract idea and metaphor of space for other reasons. A space in this sense can be made up by relations, meanings, that connect pieces of information and their classes (Bannon and Bodker, 1997). It can be interpreted in the world of so-called ontologies, that attempts to cover certain fields of knowledge, or is only sensitive to names, addresses, metadata, or meaning groups (there are theories that consider the entirety of human activity and its objective end results to be parts of this). “Space” may be either the physical point of real (information) storage (server farm, the cloud) or the abstract spaces between which we navigate, commute, and find information in a way that resembles real spaces.

The correct translation always starts with ‘information’ and not ‘Informational’, since we are not talking about a space where there is information; the idea of space is born based on the thinking based on some aspect of information itself.

2. Max Henri Boisot (1943–2011) was interested in the patterns of the formation and diffusion of knowledge, and he created his ‘I-Space’ (Information Space) theory to handle various knowledge types and flow characteristics together, explaining it in book length, more or less concurrently with the detonation of network culture (Boisot, 1995). Although the model grew out of the world of business, it is valid for any institutions, or it may even be applied for the entirety of culture as the theory of social learning.

The various – narrative, abstract/symbolic, and embodied forms flow with differing speeds throughout human communities, but learning always goes through the following four steps: scanning, problem solving, diffusion, and absorption.

The types of knowledge partially take on a path of integration, and partially move between concrete (personal) and abstract fields. If we compare types of knowledge that get to be accepted and codified with diffusion, four knowledge types may be identified:

- the codified and well diffused public knowledge (carried by newspapers, textbooks, dictionaries, databases)
- the codified but not diffused proprietary knowledge (e.g. patents, secret knowledge)
- personal knowledge, which is neither codified, nor shared
- public perception, the world of common sense, where well diffused but not codified knowledge creates a shared domain

Boisot organised the various interrelationships into a cube model, therefore his information space is actually three dimensional.

EVALUATION AND RECOMMENDATION: Boisot’s I-Space is the name of a model, therefore its life cycle will last as long as the model stays part of the professional

tradition. The other interpretation has a future if the clarified use can have a heuristic value during the uncovering of a connection, and expresses an information characteristic that may be modelled with spatial concepts non-occasionally.

References:

- Bannon, L. – Bodker, S. (1997): Constructing Common Information. Spaces. In: Hughes, John A. et al. (eds.): Proceedings of the Fifth European Conference on Computer Supported Cooperative Work Kluwer. 81–96.
- Boisot, M. (1995): Information Space: A Framework for Learning in Organizations Institutions and Cultures, London, Routledge.
- Information Space Introduction (Summary of Boisot's theory)
<https://blog.itu.dk/EB34-F2013/files/2013/02/b-34-boisot-210213.pdf> [2015-02-26]

Information spectrum

~ the set of information that is theoretically available, organised according to a principle, the individual elements of which are selected consciously, or we attempt to encompass all of them. By information, we can metonymically mean not only content, but its channels, platforms, forms, and versions, as well.

Expressions used with the same, or very similar, meaning: information selection, information supply, information landscape

Expressions from related concepts: information universe, information set, information fortune

Which category? Despite its ‘serious’ sound, only mathematical information theory is a serious term, the other occurrences, even in scientific texts, are considered occasional use.

The phrase in the language system appears again and again, as the unique meaning in the meaning of the spectrum may well be used to refer to information subjects, as well.

The Latin word ‘spectrum’ (visuality) was first used by Newton in 1671 to describe the seven primary colours, and for centuries, it was used to mean chromaticity. Its meaning has slowly flown from here to the direction of ‘the spectrum of things’, where elements that belong together but are separable could be visualised together, one could choose among them, or display them together. From here, seeing information as one such thing is easy. The more people studied the phenomenon of information from the more sides, the more situations with spectrum-like natures were identified: we see both the part and the whole.

Studying business information systems, the entire spectrum can only be made up of external and internal pieces of information of only two elements, and that is why both sides of the spectrum must be examined, as generally, too much emphasis is placed on creating internal information, and not enough on the collection, integration, processing, and transmitting to leaders of external information. In the eyes of a librarian, the point will be that the information to transmit to users must be filtered: the spectrum cannot be too wide, as then, users would be flooded with information, but neither can it be too narrow, as in that case, relevant sources may be omitted (Grebott, 2007). Researchers occasionally strive for covering the entire information spectrum (with a chance of success in more and more segments in the age of Big Data) – i.e. to include all existing pieces of information in their studies.

From the military-security policy side, the goal is control over the information spectrum (i.e. monitoring or influencing information channels). Mathematical in-

formation theory also created its own information spectrum concept in the shape of the information spectrum method (Han, 2002).

Many authors call the classic DIK model (data-information-knowledge) of information science the information spectrum, where the spectrum reaches from basic/unorganised data to high-level, complex knowledge. And although it was proven time and again that this model is untenably simplificatory, it is still popular – although it is knowledge of the information family of phenomena and the immense number of information sets that lets us perceive how unsuitable three elements are to covering this incredibly expansive spectrum.

EVALUATION AND RECOMMENDATION: Using this concept, special interrelationships may be expressed easily and productively, and this is understandable for readers without a separate explanation. Other than the DIK model, there is nothing to complain about in its use. A couple of years ago, a rival with a completely identical meaning arrived in the shape of information horizon – whether it will have a chance of overcoming it remains to be seen (Sonnenwald, 2005).

References:

- Grebot, A. (2006): Interview with Sandrine Blasco lawyer-librarian In: *l'Oeil de l'ADBS* N°13
 Han, T. S. (2002): *Information-Spectrum Methods in Information Theory*. Springer.
 Sonnenwald, D.H. (2005): Information horizons. *Theories of Information Behaviour* Medford, Inf.Today 388.

Information sphere (Info-sphere)

~ one's information environment, mostly mediated by technology, that plays a larger and larger role in our contact with the world and society and creates new cultural spaces, forms, and ways of life.

Expressions used with the same, or very similar, meaning: information environment, information ecosystem, information bubble, noosphere, semiosphere

Expressions from related concepts: networked existence, information culture, information civilization

Which category? It is a fertile, ingenious phrase that is clearly understandable when one first hears it, that started on the path of becoming a technical term as many started to study it a subject.

The phrase in the language system is popular in its short form, it is often spoken in professional conversations.

Creation of the term is attributed by many authors to one of the fathers of artificial intelligence, John McCarthy. Its first documented use is from an 1971 Time Magazine book review, but its popularity stems from Alvin Toffler's legendary 1980 book, 'Third Wave'.

The term 'infosphere' was doubtlessly inspired by 'biosphere' (so much that some authors think about whether Darwin's laws also work here, whether there is selection, and if yes, what it is exactly that competes). Behind its meaning, two other expressions are hidden, used by Vladimir Vernadsky in the 1930s: the geosphere (as the one before the biosphere) and the noosphere, as a quality built upon it, the empire of human sentience and cognition – at the same time, the last chapter of a Great Story.

Infosphere is a better defined and simpler concept than noosphere (and more or less covers the same area as Yuri Lotman's 1982 semiosphere, the world of signs and meanings). Its content and scope is described with different keywords in almost every decade (currently, the most comprehensive expression seems to be the 'internet of things', but its point is more or less the same: the devices, content, and institutions that make up the information ecosystem.

The true excitement of the history of the use stems from the importance that various people allocate it. Toffler sees the infosphere as the result of the shared development of communication solutions, society, and culture, that expands the borders of social memory. According to information philosopher Luciano Floridi, our on-line life is a new way of existence. Reality appears to us as information-natured, and whatever is information-related is perceived as real. We become information organisms (inforgs) ourselves. And although Floridi makes huge

generalisations (that John R. Searle correct generously), we believe that Charles Handy, one of the fathers of organisational science is a much bigger killer of the discourse. For him, thinking about the infosphere is only an opportunity to repeat known panic discourses: “We cannot become puppets of our information creations, we must stay in control.” “In the infosphere that surrounds us, we must not, unnoticedly, choose simple solutions, we must face challenges.”

EVALUATION AND RECOMMENDATION: The infosphere can and should be named as one of the spheres of existence (the youngest one), perhaps even in an evolutionary context. Its use is meaningful even if every author uses it in a slightly different sense. This does not confuse recipients in thinking of more or less the same thing on the most general level of meaning.

References:

- Toffler, A. (1980): *The Third Wave* Bantam Books
- Handy, C. (2015): The seduction of the infosphere. *Harvard Business Reviews*.
<https://hbr.org/2015/07/the-seductions-of-the-infosphere> [2015.07.28.]
- Floridi, L. (2014): *The Fourth Revolution: How the infosphere is reshaping human reality*. Oxford University Press.

Information star

~ a person who spontaneously ensures that information flows from the outside into a social group (typically a company organisation) outside the official channels.

Expressions used with the same, or very similar, meaning: information hunter

Antonym(s): information expropriation

Expressions from related concepts: information omnivore, business intelligence, information sources

Which category? A term created in company information management literature to describe a specific organisational role.

The phrase in the language system is virtually unknown in other fields.

In the late sixties, Thomas J. Allen researched information flow in various organisations, attempting to answer questions such as how groups that are, for various limitations, closed off from the outside information flow (e.g. military researchers and developers) still manage to be efficient (Allen, 1969). He noticed that the more diverse outside information contacts members have, the more efficient the communities are. Using sociometric analysis, he managed to find those people that who served as channels for outside information to the group. He named the nodes that were found and identified “gatekeepers”, but just as the expression was born, productive debates started in order to find an even more fitting description. “Gatekeepers” were associated more and more with ‘filtering’, ‘selection’; meanwhile, some pointed out that the persons in question do not ‘keep’ a gate, they are the gates themselves.

This is why Tushman and Scanlan (1981) introduced the term ‘information star’ for this role, and the knowledge management literature quickly decided to adopt it. The most important role of information stars is to provide continuous outwardness, openness to the outside world. They work as a sort of ‘permeable membrane’ that allows the outside world to filter inside the organisation, depending on the time and intensity of the information star’s ‘exposure’ to the effect of spaces made up by personal encounters, written sources, and information-rich environments.

An important characteristic of information stars is that delivering useful information to the organisation is typically not part of their job description, but a result of their personal motivation, interests, ‘inner workings’. Therefore it is generally hard to tell who they are in a given community. Researchers proved early on that the role is typically informal (Fischer and Rosen, 1982). By now, it is also proved

that women very rarely become information stars, because of their multiply disadvantaged organisational situation. (Sridhar, 2002).

EVALUATION AND RECOMMENDATION: The identification, support, and ‘positioning’ of information stars, or if there are none, their creation is a task that is, by now, a given from CEOs to public officials, from organisations open for outside processes to municipal governments planning the future of their own settlements. Thus a slow diffusion and increase in the use of the expression may be cautiously foreseen.

References:

- Allen, T. J. (1969): Meeting the Technical Information needs of research and development projects. MIT.
<http://dspace.mit.edu/bitstream/handle/1721.1/48489/meetingtechnical00alle.pdf?sequence=1>
- Tushman, M. – Scanlan, T. (1981): Characteristics and External Orientations of Boundary Spanning Individuals. *Academy of Management Journal* 2, 83–98. Ugyanók: Boundary Spanning Individuals: Their Role in Information Transfer and Their Antecedents. *Academy of Management Journal* 24 (2), 1981. 289–305.
- Fischer, W.A. – Rosen, B. (1982): The Search for the Latent Information Star, *R&D Management* 2, 61–66.
- Sridhar M. S. (2002): Library use and user research: with twenty case studies. Concept Publishing Company, New Delhi, 280.

Information station, Infostation

1. ~ a special node constructed in isolated, rarely used areas of mobile telephone networks that only transmits data when a mobile phone or other mobile device is inside the reception area.

Expressions used with the same, or very similar, meaning: –

Expressions from related concepts: mobile telecommunications, information infrastructure

Which category? A not particularly inventive telecommunications-engineering definition.

The phrase in the language system is only meaningful for telecommunication network experts.

2. ~ an informative device in buildings and public spaces that, beyond mere information provision, makes informative transactions possible (i.e. it has both a data input module and a visualisation module).

Expressions used with the same, or very similar, meaning: information kiosk, information terminal, information counter, POI – Point of Information, Information Gas Station

Expressions from related concepts:

Which category? A part of everyday vocabulary, also common as an invented name (i.e. the names of companies and content providers).

The phrase in the language system is present but we also use a number of other expressions for the same kind of physical object.

1. Information stations serve to increase telecommunications capacity and to decrease costs. The literature differentiates between two types of information stations: static and mobile (Woungang et al., 2013). In the last two decades, numerous technical solutions have been developed to make reaching key objectives easier. The solution retreats to smaller and smaller areas with the increase of coverage, but we may still encounter the expression in the language of the telecommunications profession, in textbooks, and in technical descriptions.

2. Since the millennium, we got to know newer and newer generations of self-service information systems in physical public spaces. These objects that often have unique designs but are still powerful are constructed from combinations of plastic, metal, and occasionally wood and glass, and have a permanent network

connection, and more and more often, are operated via touchscreen. The name 'kiosk' comes from English, as opposed to the neutral 'station' and 'terminal', which only convey information.

In financial or buy/sell transactions, the station is, in the economic sense, a Point of Sale (POS, such as well-known ATMs or photo development machines), and when it only has an informative role (in a public building, in traffic control, or in tourism), a Point of Information (POI). We call it an information counter if it is not entirely self-service, but there is a person available to help users (someone 'stands' on the other side). Devices may be portable or relocatable for healthcare, environmental protection, and traffic control goals, thus the age of Mobile Information Stations (MIS) has also come.

EVALUATION AND RECOMMENDATION: The telecommunications use will further decrease as the technology changes, and kiosk is a much more popular and better diffused expression than station. The inexpressive 'information station' is likely to fade from use in the medium run.

References:

Woungang, I. et al. (szerk.) (2013): Routing in Opportunistic Networks. Springer.

Information statistics

~ statistics on the production, publication, trade, export, import, use, accumulation, consumption, utilisation, and stocking of information products and information services, the indices of which may be interpreted on both micro and macro statistical levels...for various sectors, households, the sector of individuals, businesses, and the sectors of the public sector and NGOs.

Expressions used with the same, or very similar, meaning: information society statistics, statistics of the information economy sector

Expressions from related concepts: information measurement, information flow, infosphere

Which category? A piece of specialist terminology, only used in a specific sense inside statistics.

The phrase in the language system is known in this sense solely among professionals of the field.

A Japanese, then Hungarian developed unique statistical methodology and domain: a unified method of measuring any content convertible for a digital carrier, the equivalent of which is the bit. It absorbs the fields of information products (books, periodicals, newspapers, records, cassettes, CDs), radio and television broadcasts, the mass of messages in telecommunications systems, and even educational services that may be translated into bits.

Excellent Hungarian experts have created the “world’s first information statistic with concepts, nomenclatures, data collections, and publications” in the Hungarian Central Statistical Office. The initiatives formed after the millennium that aim solely to estimate the yearly mass of information emissions, measured in bits, are sequels to this ideology and methodology. These publications, that are less and less clear methodologically and contain more and more estimations, are spectacular, they prove the incredible growth of the size of the information universe (‘the brontobyte era is coming’), but they have the same – unfortunate – issues as the ‘classic’ Japanese-Hungarian information statistics. They do not actually measure information, but signals, certain classes of which take up space in the world of bits based on the nature of the channel and coding. One underexposed, fuzzy, but colourful picture uploaded to Flickr that may show anything from pencils to a forest can be represented in statistics as the same size as stock market reports and analyses of the most developed countries in a simple document format. In other words: information statistics is insensitive to information itself.

EVALUATION AND RECOMMENDATION: The expression refers to a school of statistics that, by now, is half-dead. It is, however, important to note that information statistics also exists as a field of probability theory, and between 1995 and 2010, it was also used as the shorter form of 'Information society statistics' (this practice is used no more). And sector information statistics that measure the size of the information sector of economy, the number of people employed there, and the most important indicators of the information market in a more or less standardised system that allows international comparison, that now have a history of more than half a century. To summarise: today, information statistics is part historical addendum, partially a continuing view, that still produces results of dubious value.

References:

- Dienes I. (Ed.) (1988,1989): Informaciostatisztikai adattár I–II. Központi Statisztikai Hivatal, Budapest, 260, 230.
- Tomita, T. (1975): The volume of information flow and the quantum evaluation of media. *Telecommunication Journal* 42 (6), 339–349.

Information strategy

~ the approach and planning methodology that aids the realisation of a (corporate) organisation's strategic vision with the appropriate development of information processes and resources.

Expressions used with the same, or very similar, meaning: information governance

Expressions from related concepts: information design, information society, information ecosystem, information management

Which category? A term from the dictionary of information management that is used today in an organisational and management theory context.

The phrase in the language system has gone through an intensive expansion, than narrowing of meaning, until it became relatively stable.

The following expressions started to diffuse in parallel to the expansion of company information management systems in the Eighties. “Strategic Information Systems” (SIS), “Strategic Information Management” (SIM), “Strategic Planning for Management Information Systems”. Experts fought serious battles to get the community to accept their own classifications and interpretations, but they managed to do all this in a way that information strategy emerged as an umbrella term.

Some confusion was caused for a while, as it was used interchangeably with the IT-strategy expression, but after a decade long process of clarification, the latter was only used to refer to the planning of the engineering-infrastructure and device side, while information strategy was used to refer to the development of the entire information ecosystem to realise future company visions.

University courses, then later, minors took the name information strategy, and from 1984 onwards, a journal was published with this name (Information Strategy: The Executive's Journal). Its name change in 2004 reflected the expansion of information strategy in 2004, and emphasis was put on the non-technological components of the information environment. Its earlier meaning and the technological focus were taken over by “Information Systems Management” (ISM). Information strategy was ‘freed’ into the world of large organisations or sectors – such as universities, healthcare, public administration, and the military (Arquilla and Borer, 2007), where it took on the meaning of the planning of internal information processes and resources that match the fast changing information environment.

And from this point, another expansion of the meaning was only a step further. In the mid-90s, ‘national information strategy’ became the accepted form for the inter-sectoral information future planning, but when consensus was created in

debate, that technology should not be the only important factor here, and a more comprehensive concept is needed, ‘information society development strategies’ came about, and ‘information strategy’ became the short name for these. In a national information strategy, information infrastructure development, the engineering side (telecommunications, broadband, facilities, regulations), information industry development policy, information policy, and the informatisation of various social subsystems melt together. For a brief moment, it seemed that information society strategies may become comprehensive future building programmes on a higher systemic level, where the subject of design is not the information technology side and the contentual, institutional, and actor world of information, but society itself: along the normative criteria that reinforce the structures of adaptability and creativity in the race of the information society, while they also solve acute social policy issues efficiently, as well. Numerous information strategies got close to melting together the key areas of information and knowledge: education, science, innovation, and culture in the same strategic planning space, with the power of information technology behind it.

However, after the Millennium, it turned out that national strategies did not strive for a higher level of integration, but fell back to sectoral and divisional logic, a lower system level. In fact, informatics strategies are being born again, only that the word before strategy is now digital or infocommunication. Therefore the use of information strategy has also retreated to the meaning of “the information based future planning of large organisations (specifically companies) and implementation of matching systems”.

EVALUATION AND RECOMMENDATION: The interpretation that has stabilised by now seems appropriate and usable, one only has to pay attention to avoid confusion from conceptual historical antecedents when an exact description is needed.

References:

- Applegate, L. (2008): *Corporate Information Strategy and Management: Text and Cases*, McGraw-Hill Education, 8th ed.
- Arquilla, J. – Borer, D. A. (2007): *Information Strategy and Warfare: A Guide to Theory and Practice* Routledge.

Information style

~ the individual pattern of performing information operations.

Expressions used with the same, or very similar, meaning: information use habits

Expressions from related concepts: information behaviour, information activity, information operation, information environment

Which category? Although the representatives of multiple scientific fields use it as a term, the phrase has not yet reached the level of clarity necessary to consider it one. For now, it is in a space of competing interpretations, the various uses may be considered independent conceptual innovation attempts.

The phrase in the language system rarely appears, its use is minimal.

The approach that identifies two information styles as components of ‘information behaviour performed in an information environment’ – the pragmatic and the analytic styles – has spread in information science after Diane Nahl’s (2007) work

The pragmatic style prefers easy access to information, the comprehensible organisation of information, low prices, and fast access to electronic resources. The attribute of the analytic style is the deeper intellectual processing of information. The emphasis is on the reliability and the authenticity of information, it focuses on the evaluation process, dominated by quality and relevance. For example, the Google generation is pragmatic, that is why they may have issues with concentrated observations and critical thinking.

Others, however, identify information styles in completely different ways. Palmer (1991), after studying the information behaviour of scientists, has created a classification that was sensitive to various differences in style, yet the difference between the information styles of men and women proved to be the strongest variable. In knowledge management literature, studies that analyse the utility of information use the expression when they consider the limits of understandability, and finding one of its forms in the language and information style of various professional cultures. (For every profession, there is an information style.) Japanese scientists approach the issue from a considerably different viewpoint: according to them, personal information style is created by the way we build our own mix of sources around us from the huge diversity of content types (Seko, 2013).

We believe we see the place of the expression in the layered conceptual network of information actions in a way that can contain all the ‘separate’ interpretations. If information behaviour is nothing but the comprehensive quality that contains the entirety of our types of information behaviour, and information operations are its identifiable and sectionable forms of actualisation in reality, information style

is the individual differences that are captured in the characteristic differences of operations at the intersection of the individual's complex internal world and the similarly complex world of the information environment. Based on the actual study viewpoint, we will always identify different things as the style, but those will still always have a specific outline, only characteristic for individuals and groups with similar behaviours. When a style is realised often, it is also referred to as information habit.

EVALUATION AND RECOMMENDATION: The expression is usable in both everyday and scientific contexts, if rival interpretations do not want to exploit it, but accept its place on the lowest level of the multi-level conceptual network (behaviour – activity – operation – style) in a comprehensive categorical sense.

References:

- Nahl, D. (2007): Social–biological information technology: An integrated conceptual framework. *Journal of the American Society for Information Science and Technology* 58 (13), 2021–2046.
- Palmer, J. (1991): Scintists and information: I. Using cluster analysis to identify information style. *Journal of Documentation* 47 (2), 105–129.
- Seko, S. et al. (2013) Personal Information Style, NTT Technological Review 4.
https://www.nttreview.jp/archive/ntttechnical.php?contents=ntr201304fa4_s.html [2016-02-11]

Information superhighway

~ a high-speed, worldwide data exchange network. Its creators wanted to use the concept to refer to the drastically increased transmission speed (bandwidth) compared to any earlier transmission channel, and the ability to transmit any traditional audio, picture, movie, and text information that is made possible by this (multimedia), and among with all this, allowing a new kind of relationship between providers and consumers.

Expressions used with the same, or very similar, meaning: information utility
Expressions from related concepts: –

Which category? The term had filtered from American technology policy into the vocabulary of international information policy and was very popular for a couple of years, but by now, it is barely used.

The phrase in the language system still exists in a bubble; it is virtually only used in literature reflecting on the 90s.

The world press and political marketing took up the bombastic-sounding ‘information superhighway’ (infoway) phrase after American Vice President Al(bert) Gore’s presentation at the 1994 World Telecommunication Development Conference at Buenos Aires. The phrase was made dominant for a year or two when speaking about the ‘wired world’. However, it was also the subject to the world’s first and most populous teleconference, as well: the discussion organised with support from Silicon Graphics that President Bill Clinton and Al Gore also participated in was joined by 200 people from 11 countries and 22 time zones in order to discuss the future of the information superhighway (Kahn, 1993).

Although the term seemed controversial from the beginning, for a while, it was used all the time all over the world, regardless that very different interpretations had appeared in seconds. Some used it to mean the great future Internet, others, its future rival realised by telecom giants, and yet others, a collective name for all infohigh-tech things; finally some considered it the omniscient future cable system. It doubtlessly became very popular, including its short (info-highway), shorter (I-way), and German (Infobahn) versions.

Back then, the American politician had been thinking for more than 20 years about how the world got into the same situation again as the legendary New Deal national road building programme, but this time, not traffic, but information flow had to be made faster (not to mention that most associate the American highway programme with Senator Albert Gore Senior). Al Gore already spoke of this at an 1978 professional consultation, importing the ‘super’ attribute from computers

that had, even then, represented a special performance category. (“The supercomputers of our age exist, but the paths that connect them are not built yet”). Therefore it is no accident that when the 776 mile cable network that connected major East Coast cities; Boston, New York, Philadelphia, and Washington, D.C., was inaugurated in 1983, the phrase also appeared in the press. In the mid-90s, it underwent a renaissance as it became a global programme. However, it faded from the dictionary afterwards as a matter of seconds, its role was overtaken by other expression.

The two historical predecessors of the concepts are also very exciting. In the form ‘Electronic Super Highway’, it was used by Korean artist Nam June Paik in a 1974 study for the Rockefeller Foundation. However, its true predecessor was the brave and full-fledged Polish information infrastructure project, started between 1971 and 1974, the Infostrada (Krajowy System Informatyczny – KSI). (The national computer network working in a time-share system, on a package connected basis was inspired by the similar-sounding Warsaw main route, Wislostrada.) The program, however, was cancelled, and its leader, Andrzej Targowski, had to emigrate – to the United States, where he became a university teacher and an adviser to Albert Gore.

EVALUATION AND RECOMMENDATION: When the phrase found its way into other languages, it was interesting to face the fact that many rival translations were created for the strange-sounding expression in most countries – than use became unified relative quickly, in a couple of years.

References:

- Kahn, J. (1993): Building and Rescuing the Information Superhighway. LBL Research Review, Summer.
<http://www.lbl.gov/Science-Articles/Archive/information-superhighway.html>

Information superiority

~ a state in which one of the opposing parties can access necessary information faster and more efficiently, and may turn it into a real combat advantage.

Antonym(s): information drawback

Expressions from related concepts: information warfare, information asymmetry

Which category? Military science and military practice-professional.

The phrase in the language system is only used in a sustained way in military subcultures. Its occasional everyday use also occurs outside this circle.

In modern warfare, ownership of information is a key element of strategic and tactical superiority. The advantage is directly proportional to the quantity of information and the speed of its acquisition. The opposing parties aim to gain as much relevant and critical information as quickly as possible. Thus, in the early 90s, the concept of information superiority was born, concurrently with information warfare.

Information superiority can have a beneficial effect on both military conflicts and conflicts without the use of military power. While in the first case, it has a key role in forcing military success in the operational area, while in the other, it has a role in sabotaging the structure of the enemy country or area. If one party has a considerably larger, overwhelming information superiority, that may evolve into information dominance, in which the domineered party is completely deprived of the opportunity of attaining, processing, or transmitting information.

Information superiority can only become a strong weapon when its owner can and is willing to employ it efficiently for their own benefit.

EVALUATION AND RECOMMENDATION: Although the drive to attain information superiority may also be found in other social sub-systems (politics, science, and primarily economy), those are not games with opposing interests, the patterns of competition, cooperation, and co-dependence are different. Thus the use of information superiority becomes more and more exclusive to the military context.

References:

Alberts, D. S. et al.: Network Centric Warfare: Developing and Leveraging Information Superiority. C4ISR Cooperative Research Program.

Information systems

1. ~ Organised and interacting groups of information captured mostly as data, the relevant information events, information activities performed on them, the necessary resources and technical solutions, information users, and the standards and processes that regulate the above.

Expressions used with the same, or very similar, meaning: information ecosystem, information infrastructure

Expressions from related concepts: information management, information superhighway, information technology, information efficiency

Which category? A high-level umbrella term that expresses the piece of reality covered by the scientific and professional scope of informatics.

The phrase in the language system is more and more used in an expanded sense, in an ever wider range.

2. ~ the pieces and subsets of the information universe that organises itself from the simple starting shapes to more and more comprehensive figures that contain the elements of information assets necessary for grasping the part of reality in question in a structured form, and have an organisational nature.

Expressions used with the same, or very similar, meaning: information set, scheme, information group, information cluster, semantic net

Expressions from related concepts: information ecosystem, information metatheory, symbol processing, information culture

Which category? A categoric name of a special class of systems in an epistemology, logical, and information science context.

The phrase in the language system is present, but it is system very often and incorrectly mixed up with the meaning of information.

1. Ever since humanity has started to use technology to improve its own, biologically determined information management abilities, the actual solutions that result in an expanded ability and a higher information force have been organising in some type of system configuration (man+device+information). The earliest and simplest systemic configuration is the system of border signs, in which the

symbolic meaning of a man-made object has regulated the spatial behaviour of communities.

Naturally, all the later solutions of information history carried a typical systemic nature – i.e. writing, its material carriers, and the conventional code that could decode writing into information together formed the information recording systems, the early forms of messaging and their more developed postal versions have formed an information transmitting system, memory institutions (library, archive, etc.) an information storage system, etc. These have made up the information systems of information culture together in every era.

Thus, it is important to note that by the time the era of electronic information processing came by, cultural and technology history has produced a series of information systems with a high substantive value: on the human side, with specialists and organised groups of specialists, and on the device side, with more and more complex artificial objects, artefacts (devices, machines, information factories), on the information side, more and more complex information systems (the alphabets of dead languages, figures, drawings, numbers, symbols, codes and cyphers, and knowledge recorded in databases).

Today, in the connected world of big organisations (companies, public sector institutions, scientific research places, educational systems) we have such large information systems that their systemic nature presents itself through the fact that their parts are information systems, as well. The informatics-IT system (hardware, network, operation system, database management solutions, applications, etc.), the information management system (the logic that controls information management), and the system made up of the managed pieces of information – the content side, without which the other two (sub)systems are only empty shells – are all independent systems.

The usage of these words developed in the direction of the major areas of use, therefore, depending on the types of content they use and the social-economic functions they support, we may talk about specialised corporate, healthcare, educational, flight control, and other information systems. These operate with numerous identical attributes, characteristics, and laws, therefore information systems, as an area of knowledge mean their common multiple: whoever learns the bases of the construction, operation, and monitoring of any information system, and knows technological solutions that aid the infrastructural substructure will be capable of operating any concrete, unique information systems. (Naturally only if they are also aware that the entire technological apparatus serves information content, i.e. with an appropriate information consciousness.)

2. Information system is a logical-epistemological category, a new type of system that joins the family of pre-existing system types (live systems, material systems, social systems) defined in systems science (system theory, system view, cybernetics). Everything that is true regarding other systems is also true regarding the

systems of information: they change into various directions producing permanent, typical movements (system dynamics), it is organised on multiple levels, between which, innumerable types of relationships can exist (subordinate, superordinate, and juxtaposed relationships, changing hierarchies, etc.). For example, a thesaurus, i.e. the entire vocabulary of a professional world that attempts to provide all special meanings is an information system. So is a taxonomy which, for example, presents the names of animals and vegetables based on defined organisational principles. When we discuss ontologies in the sense of uncovering the relationships between concepts, and not as a basic philosophical term, we also talk about a massive information system that is built with human power, and more recently, with a lot of artificial intelligence support.

The information system components of corporate information systems are generally defined as the “structured form that connects data inputs and information outputs”. These are embodied by information sets and processes (on the computer side, curated by signal processing, computing, aggregation, and logical methods) that the organisation needs for operation and control in its own business environment.

EVALUATION AND RECOMMENDATION: In English, the two different meanings are covered by the same expression, with a first registered occurrence in 1904. The extreme mixing of the two interpretations may be traced back not only to erroneous translations, but to a laziness of interpretation, as well. Their separation, as we perceived, is not easy, as information systems are part of information systems, but similarly, the concepts of information system and informatics system also meld together sometimes, even though this latter one is also a partial system. The most painful small worlds of this conceptual cavalcade are university course titles, that mix these three meanings in the most varied ways (although the detailed description always lets us know which expression they use for which meaning). If there was a task that belongs to science policy and linguistics at the same time, that would be a clear presentation of the interpretations detailed in the article in subject curricula and the practice of education.

References:

- Beynon-Davies, P. (2002): Information Systems: An Introduction To Informatics. In: Organisations. Palgrave Macmillan.
 McLeod, R. Jr. – Schell, G. P. (2003): Management Information Systems. Prentice Hall.

T

Information technology

~ in a narrow sense, the entirety of electronic devices and methods for machine signal processing and signal transmission. In a wider sense, expansion of our biological information management abilities with the help of outside resources.

Expressions used with the same, or very similar, meaning: information and communication technology/techniques, information and knowledge technology

Antonym(s): mechanical/energy technology

Expressions from related concepts: information processing

Which category? A term that has entered the base vocabulary of multiple fields of science and professions.

The phrase in the language system was appropriated by the engineering-IT area, and this has a detrimental effect on the historical and theoretical embedding of the concept.

The glorious advancing of computer data processing, that encompasses virtually all aspects of life, and computing science, developing in parallel, have, together, created the need for an umbrella term for the base systems of signal processing and transmission. This, in English-speaking countries, is information technology, elsewhere, informatics.) We find variations on this short definition, crystallised step-by-step from the 70s onwards, in information technology/informatics textbooks, and not even the appearance of the 'infocommunications technology' term, that, according to studies, first appeared in a 1997 British publication, changed this fact.

Supporting the information capacity was very rich and diverse even in the pre-electronic age. And let us think of not only 'antecedents' (the calculator and early forms of automatization and programming), but every method and device that somehow expands our biologically determined information management ability in an operational field, identified in cultural history. The 'cutting edge' of evolutionary information technology is the high-tech information machine built from biological materials, the brain connected to sensory organs. Humanity (and most probably, even simians) uses and has used outside resources to make this unique information system more efficient. In every field of the human information cycle:

sensing (representing) the environment, processing the resulting information, reinforcing the memory production that supports it, making the decision that turns information processing into action, and finally, in making internal information content external, and objectifying it (e.g. communication). Therefore signalling and warning systems, optical technologies, and measurement that improve representation ability are organic parts of the history of information technology. (Even language itself, which makes things representable through the power of naming them). Memory and decision support.

The innumerable ways of managing and transmitting information. Humanity has used almost every available tool for this through its history: animals used in various ways, simple tools, and capacity building methods. Later, mechanical machines, then complex manufacturing lines, and finally, complexes of people and machines, information factories (presses, news agencies, the post, etc.), with which information processes became industrialised. This development had led, in the end, to the appearance of machine information technology.

EVALUATION AND RECOMMENDATION: We suggest using a ‘information technology’ in the wide sense, as it includes the tools and methods of machine information processing, moreover, it reminds IT experts that information technology is also relevant outside the digital/electronic world (and not only in time, as a predecessor, but even today, as numerous parallel, non-digital technologies exist). We do not recommend using the phrase ‘infocommunications technology’, as while the appearance of infocommunications was an adequate reference to the starting melt of the corporate worlds of informatics and telecommunications, despite the doubtless convergence of the technological base systems of these companies, we must interpret it as tautology on the theoretical level (as communications technology is part of the more generalised information technology).

Information terrorism

~ the use of any network or other information system service, or even their components, for a terrorist campaign or action, and the malicious intervention into the operations of an information system connected to physical act of terrorist violence.

Expressions used with the same, or very similar, meaning: cyberterrorism, information warfare

Expressions from related concepts: critical information infrastructure, hackers, crackers

Which category? An expression created for the professional naming of a new class of phenomena that occasionally makes it to the language of the press from the vocabulary of security policy.

The phrase in the language system is used solely in the political discourse.

The literature attributes the phrase ‘information terrorism’ to Timothy Thomas (O’Brien, 2004), who suggested its introduction around the Millennium to reflect on ‘traditional’ terrorism starting to use the Internet more and more for its own destructive goals (the supplied definition was also published by him). In fact, the concept had been proposed earlier (Devost et al., 1997), and ‘cyber terrorism’ had been used even back in the early 80s, and the destructive use of new opportunities offered by information technology only became part of information warfare before the Millennium. However, it is different from ‘information age terrorism’, as that encompasses all other, non-information related forms of terrorism (Littleton, 1995). Therefore political debates on wire-tapping citizens’ phone calls and controlling the electronic data stream do not regard information terrorism, as against that, governments fight by creating independent cyber divisions.

In a strategic sense, control over the information environment and achieving information advantages in games between competing partners is at stake (Post et al., 2000). This is also why politicians like to call persons publishing confidential government data in defence of democratic values ‘information terrorists’ – with the clear goal of making these leakers who cause them a special kind of trouble look as bad as possible by associating them with actual murderous terrorists.

EVALUATION AND RECOMMENDATION: Because of the uncertainties of interpretation and the quickly changing family of related concepts, we presume that use of the expression will decrease in the middle run.

References:

- Devost, M. – Houghton, B. – Pollard, N. (1997): Information Terrorism: Political Violence in the Information Age Terrorism and Political Violence. 1, 72–83.
- O'Brien, K. A. (2004): Information Age terrorism and Warfare. In: Globalisation and the new terror: the Asia Pacific dimension. Ed: David Martin Jones Edward Elgar Publishing, 127–158.
- Littleton M. J. (1995): Information Age terrorism. Toward cyberterror Naval Postgraduate School.
- Post, J. M. et al. (2000): From Car Bombs to Logic Bombs: The Growing Threat from Information Terrorism Terrorism and Political Violence. 2, 97–122.
- A detailed definition: <http://www.technotv.net/Technology/Information-Terrorism.html> [2015-03-26]

Information theory

~ a field born at the intersection of applied mathematics and communications that originally attempted to describe the probability of errors in electronic communication channels with mathematical methods, and by using the concept of entropy, borrowed from thermodynamics, to express the degree of uncertainty.

Expressions used with the same, or very similar, meaning: the mathematical theory of communication

Expressions from related concepts: information science, information technology, probability analysis, cybernetics

Which category? Technical terminology, the name of an independent scientific field.

The phrase in the language system has been stably rooted since the early '60s, but the fact that it has practically nothing to do with the concept of information used to describe social life processes is not well known.

Although it has earlier antecedents (Hartley, 1928), the present form of information theory started with Claude E. Shannon's 1948 publication (Shannnon, 1948), and by the Sixties, it became a mathematically complete theory expanded to include feedback, thanks to the work of the father of cybernetics, Norbert Wiener. Shannon later turned the bases, the birth, and the perspectives of the theory into a book along with Warren Weaver (Shannon-Weaver, 1971)

As information is used here as a concept for quantity, in the binary number system, it was christened 'bit' (later, other information quantity concepts were experimented with), in the flow of events, this decreases entropy (the quantifiable level of uncertainty of random variables). Measurability is of key importance for every data operation (transmission, processing, utilisation, creation, storage, accessing, subtraction, transformation, etc.), therefore it has inspired a number of practical uses along with the theoretical development of signal processing and machine communication. It has a major role in the world of code theory, statistics, natural language processing, cryptography, ecology, thermal physics, quantum computing, pattern recognition, and data analysis. And everywhere else where machine learning regarding artificial intelligence, adaptive and complex systems are researched. Meanwhile, there is a more and more expansive mathematical apparatus to deal with every step and ingredient of the information transmission process, and there are repeated experiments with taking information theory towards the direction of meaning, the quality ingredient of information. Even though a number of theories have previously claimed this, none of them were

successful. If a connection is possible, the Unified Theory of Information will hopefully lead to it.

EVALUATION AND RECOMMENDATION: Mathematicians always knew that the scope of information theory is strictly quantity-statistics-based, the concept is insensitive to semantics, to the message's content. A change in the energy state of transmitted signals is considered information, regardless of meaning. Still, researchers of social information, neuropsychic information, meaning sharing, and communication stubbornly insist of giving a Shannon-Weaver style basis to their own models and theories, therefore it always bears repeating that to do that, very different origin points (based on the information characteristics of living systems) are needed.

References:

- Hartley, R. V. L. (1927): Transmission of information
http://www.uni-leipzig.de/~biophy09/Biophysik-Vorlesung_2009-2010_DATA/QUELLEN/LIT/A/B/3/Hartley_1928_transmission_of_information.pdf
- Shannon, C. E. (1948): A Mathematical Theory of Communication, Bell System Technical Journal.
- Shannon, C. E. – Weaver, W. (1971): The Mathematical Theory of Communication. University of Illinois Press, 1971
- Ash, R. B. (1965): Information Theory. Dover Publications Inc., New York.
- Aftab, O. et al. (2001): Information theory and the digital revolution.
<http://web.mit.edu/6.933/www/Fall2001/Shannon2.pdf> [2016-04-26]

Information tidal wave

~ a huge mass of information that reaches a certain set of people (private persons, professional groups, the entirety of humanity) as a huge, destructive wave.

Expressions used with the same, or very similar, meaning: information tsunami

Expressions from related concepts: information overload, information flood, information deluge, information receptiveness, information disaster, too much information (TMI)

Which category? An everyday metaphor typically only used on professional texts on the relationship of information and society.

The phrase in the language system is generally used in a sense that does not match the meanings offered by the image that serves as the basis of the metaphor.

“The ceaseless, constant growth of information usable in clinical practice”, the information tsunami requires appropriate management – as Evans (2015) starts his publication on the information world of healthcare, and immediately illustrates the issues with using ‘tidal wave’ (tsunami is a Japanese term that is also widespread). Tidal waves appear unexpectedly and bring about incredible destruction – why would it be an appropriate metaphor to describe the ‘ceaseless, constant’ growth of information in an article that seeks technologies of adaptation?

The sad truth is that the value of the phrase is only provided by its stylistic effect, and it is used 99 times out of 100 simply as a substitute for ‘lots of’ or ‘an unmanageable amount of’ information – incorrectly. It is just as strange to connect it to navigability (Fontichiaro, 2012) or the ability of being tamed (Bruck, 2002), as these are impossible to do to a tidal wave – but would work better with a more modest water simile, for example, information flood or information ocean. However, this is how it becomes clear that it is created by stylistic exaggeration, and why it would be better if it faded from vocabularies.

A graph that depicts the sudden, lateral rise of the quantity of information that had accumulated slowly throughout the history of humanity, and then suddenly started to grow exponentially, sends a different message. This may truly recall a giant wave braking at the coast – yet it is hard to connect with the sequel, the destructive catastrophe. Information, because of its immaterial nature, is incapable of physical destruction, the expression needs to be grown almost into an allegory in order to uncover what it can be in contemporary culture that is endangered by the growing magnitude information as tidal waves endanger the environment.

It is no accident that those who do not use it as a synonym of ‘a lot of information’ attempt to find the expression a meaningful use without the catastrophe context. Surdak (2014) emphasises business opportunities opening up because of the mass of information, Gurri (2014) emphasises the necessarily changing relationship between power and publicity, and Fontichiaro (2012), the necessity of preparing young students for the world of big data.

EVALUATION AND RECOMMENDATION: The expression is so widespread that it even made it into the title of books – regardless, its common use is inaccurate, it only increases the range of concepts that may stylistically be used instead of information explosion. If no accepted meaning that matches the true attributes of a tidal wave comes to be, it will disappear from the language in the long run.

References:

- Evans, D. (2015): Managing the Information Tsunami in Healthcare. LinkedIn, October 1.
<https://www.linkedin.com/pulse/managing-information-tsunami-healthcare-david-evans>
- Surdak, C. (2014): Data crush: How the Information Tidal Wave is driving new business opportunities. AMACOM.
- Fontichiaro, K. (szerk.) (2012): Navigating the Information Tsunami: Engaging Research Projects That Meet the Common Core State Standards. K-5 Cherry Lake Publishing.
- Taming the Information Tsunami: Four Questions About Horizon Scanning, Battelle Staff, 2015. May19.
[http://www.battelle.org/media/the-battelle-insider/the-battelle-blog/2015/05/19/taming the-information-tsunami-four-questions-about-horizon-scanning](http://www.battelle.org/media/the-battelle-insider/the-battelle-blog/2015/05/19/taming-the-information-tsunami-four-questions-about-horizon-scanning)
- Bruck, B. (2002): Taming the Information Tsunami. Microsoft Press.
- Gurri, M. (2014): How a Tsunami of Information Inspired the Revolt of the Public Libertarianism. com, August 11.

Information transmission

~ the process in which information gets from one party to the other.

Expressions used with the same, or very similar, meaning: information transfer, information transmission, signal transfer, communication, data transfer

Antonym(s): information retention, information quarantine

Expressions from related concepts: information flow

Which category? The meaning is in between everyday and scientific use.

The phrase in the language system is mostly used as part of the group of ideas related to the basic model of communication, but because of the multiplication of related expressions, differences in meaning should be cleared up as soon as possible, while also defining their relationships to each other.

Since the first occurrences in the early Modern Age, information transmission had an everyday, basic meaning, generally used to start definitions of information: the sharing of news, notices, personal communication with others. The basic forms created in verbality were later joined by the written word (in the ‘missile’ attribute of sent letters we can recognize the linguistic element that refers to transmission), then came the technologically transmitted world of voice (telephone, radio), and picture (fax, television) transmission. After the Second World War, Claude Shannon and Warren Weaver (1949) developed the mathematical-statistical theory that created a hinterland of knowledge, optimising network planning for the quantitative aspects of signals transmitted through noisy channels. The cybernetic model that includes all the stages and basic characteristics of transmissions between the source of information (sender) and the recipient (receiver) valid for every system, became very popular overnight everywhere, where communication phenomena were discussed.

Communication theory (and specifically mass communication) research started to grow rapidly, and still – even though the meaning of transmitted messages is hugely important here – it adopted the concepts of the mathematical model that is not sensitive to this. The same thing happened to biological information transmission, animal communication: from the chemical signal exchange of animals on the lowest level, to the communication of more advanced animals, to the description of the most complicated human psycholinguistic conventions, the Shannon and Weaver model’s conceptual frame was used everywhere.

In the case of interpersonal communications, signals are transmitted not only in written, but in spoken communication, as well: coding is the transformation of meaning into signal, decoding is turning the signal back into its meaning. What is transmitted is the bare signal. However, as we may find information at both the

beginning and the end of the process (in both heads), it is not incorrect to speak of information transfer instead of signal transfer. (As the metonymic information processing may also be used for a computer that processes signals.)

In man-made, technical system, there are cases when the source of the incoming signal is not the human mind, but solely a technical data transmission. Electromagnetic or infra-red signals, radio waves and microwaves travel between two points (i.e. two computers, mobile phones, special devices) via copper wires, fibre optics, wireless communication channels, or even various data media. For example, sensors record, store, and transmit data based on their programming and settings, and human minds turn them into information in the processing system outputs, often in even more processed forms. In extremely automatized systems, speaking of signal transmission instead of information transmission is more adequate.

EVALUATION AND RECOMMENDATION: Because of the above, we use differing expressions for the differing aspects. However, it is possible to organise the various versions, often used ad hoc, in a logical order. The intent of the act that starts the process, the will of the communicator is strictly associated with the idea of information transfer. The emphasis is on the beginning of the process, therefore talking about information transmission may often be correct. If we say ‘information transfer’, the focus is on the part between the sender and the recipient, and our questions are technical in nature. However, when the important part is whether information arrives at the destination, it is better to use ‘information delivery’. This is, today, often important for legal reasons (juries, in disputed cases, examine whether delivery actually happened, information got to its destination, and thus whether it could become the basis of decisions or not).

References:

Proakis, J. (2000): Digital Communications, 4. kiadás, McGraw-Hill.

Information trap

~ because users are flooded with relevant, personalised information, or because of their little, unidirectional content consumption strategy, the number of Internet searches that make learning about alternative information and views possible lead to a one-sided, closed-minded view, and create a belief of being well-informed.

Expressions used with the same, or very similar, meaning: information distortion, imperfect information

Antonym(s): perfect information

Expressions from related concepts: information inequality, manipulation, information poverty, negative information, information “exposure”

Which category? The phrase appeared only recently, but is already on its way to become accepted as a technical term.

The phrase in the language system may expect to gain strength, especially in the language of the press.

Nowadays, advertisers – for a fee – can access keywords of Internet searches, databases listing search results, and ‘on-line footprints’ that record user behaviour that they can use to bombard users with personalised, relevant information. Although, according to the generally accepted view, this phenomenon makes information access easier and faster, it also carries the possibility of negative outcomes. The well known Internet expert Arnold Roosendaal named the characteristic of the developing user culture is that users are practically spoon-fed information, they can only access the ‘net’ search results, thus they are deprived of the possibility of searching and its outcome, a wider range of knowledge the ‘information trap’ at a 2014 TED conference. Their freedom of decision is limited to choosing from a small number of offered options, and this leads to information poverty and unilateralism. Users lose access to lots of information, the ability to sense alternative positions, thus they get trapped in closed-mindedness.

According to the expert, the mechanism has other consequences that are much more severe than closed-mindedness. It increases the polarisation of society, and creates new forms of information inequality. And even though we believe that the counter-mechanisms are also continuously formed, typical and atypical information traps undoubtedly deserve serious attention. Moreover, as the ever stronger waves of Big Data promise objectivity and reliability with results filtered from the analysis of huge masses of data; at the same time, they are just as exposed to distortions stemming from provider interests, and thus, some of the new generation of information traps are already outlined.

EVALUATION AND RECOMMENDATION: The phrase ‘information trap’ may be encountered outside Roosendaal’s exact definition, in other contexts; however, these occurrences are generally not backed by an existing concept or theory, authors are simply seduced by the stylistic value of using the image of a trap for an information-related situation. As the term gains strength in its specific meaning, its occasional and casual use is expected to fade.

References:

Roosendaal, A.: The Information Trap.

<http://tedxtalks.ted.com/video/The-Information-Trap-Arnold-Roo> [2015-07-14]

Information turn

~ a change of perspective, characteristic of multiple contemporary fields of science, that results in various authors assigning information phenomena a much more central place than before, rewriting or rethinking multiple 'classic', traditional points of reference in the given field.

Expressions used with the same, or very similar, meaning: paninformationalism

Expressions from related concepts: information age

Which category? A technical term.

The phrase in the language system is about to diffuse, it is expected to grow stronger as it will be applied for newer and newer scientific fields.

The discourse on the multi-millennium history the parallel existence of oral and written cultures has, for decades, been one of the most exciting and productive areas of contemporary communication science and anthropology. William Mitchell's pictorial turn (1994) or its variation, Gottfried Boehm's iconic turn (ikonische wendung, 1995) drew attention to how visuality, images, and image-based thinking are necessary to be added to oral and written culture, as a third base layer of information culture connected to the above. (Philosopher Richard Rorty provided the model with his "linguistic turn" expression from the mid-60s.)

The phrase 'information turn' became fashionable after the millennium, used by theories building upon technology or a new-fangled approach to the concept of information in various sciences: from brain research to theoretical physics to philosophy, where the issue now has its own on-line workshop.

It has been extended to the humanities by Austrian scientists, and to economy science by others. Recently, urban researchers found 'information turn' to be a useful phrase. (Interestingly, history never spoke of its own information turn in this sense, as by the birth of information history as an individual field, it took a stand regarding the conceptual turn on a higher level.)

According to some, the phrase was first used by American writer and hippie counter-cultural figure Thomas Pynchon (b: 1937) as a critique of technology in his fiction works – however, he didn't use it to refer to a change inside the scientific field, but to reflect on the creation of an information society and its information technology "face" that gets pushed more and more into the foreground.

EVALUATION AND RECOMMENDATION: A research facility in the Netherlands, NARCIS has been evaluating the place and role of the information turn in general

scientific research since late 2003. Therefore we are witnessing the conceptual systemic level where objects are no more the information turns of various scientific fields, but the oft-occurring, comprehensive phenomenon – the nature, range, shared and different aspects of which describe a new research topic. In parallel, we will be able to catch how the ‘information turn’ solidifies into a clear and concise term used in book titles and glossaries.

References:

Th, D. Pynchon and the poetics of information (Lecture, 2013–2014 semester, National University of Singapore).

https://ivle.nus.edu.sg/lms/public/view_moduleoutline.aspx?CourseID=9FF42640-AC94-43C7-B5C0-F7E2F84B3290&ClickFrom=StuViewBtn [2015-03-03]

A page of philosophers, dedicated to informational turn: <http://theinformationalturn.net/>

U

Information underload

~ an occupational hazard that results in boredom, diminishing concentration, and the associated types of mistakes in the absence of a sufficient quantity of interesting information input.

Expressions used with the same, or very similar, meaning: information deficiency

Antonym(s): information overload

Expressions from related concepts: information management, information sharing, information retention

Which category? A technical term in ergonomics and organisational psychology.

The phrase in the language system is present in an inconsistent manner. As soon it is used outside the relevant scientific fields, the phrase is immediately assigned incorrect meanings. Bill Gates published a letter to ‘users’ in May 2006, before the traditional Microsoft directors’ meeting. In it, he ‘introduces’ a concept that he calls information underload, the opposite of information overload, as his own invented word.

He wrote, “being flooded with information doesn’t mean we have the right information or that we’re in touch with the right people”.

The problem with all this is that the term had been in use way before Gates, in a different sense. Gates speaks of issues of information digestion and information processing, caused by too much information and the lack of appropriate solutions. Information underload, however, means something very different. It is an information-poor work environment or situation. It is when incoming information is too little, too irrelevant, too unsatisfactory, too slow, and this causes a specific ergonomic deficit: one’s attention decreases, ‘missed’ errors become more common.

The phrase is a member of the family of concepts that includes sensory underload (the lack of stimuli) and mental underload (the lack of situations that make the mind work). Information underload primarily has organisational causes: badly planned processes, the lack of information-consciousness, and the creation of information islands, from where information does not flow onwards. Lyman (2011) was surprised to see that members of the biotechnology industry had no intention

to follow, read, and review research articles, even though some great ones were available to them. This sends a message of conscious information avoidance that may also be a source of underload. Thus it is important to exclude and criticise the interpretation that defines underload as not having “ready access to the specific information we need to answer questions, solve problems, and accomplish tasks we want to accomplish” (the IAE-pedia definition). This is something else: information hunger and information consciousness exist, but the difficult part is attaining the desired information. This is expressed much better by information drought or by a low efficiency of information searches, the concept of information deficit.

EVALUATION AND RECOMMENDATION: The phrase refers to a real phenomenon in a workplace environment. There its antonym, information overload, is also comprehensible. However, as this latter one has broken from this strict domain, and has diffused in the mythical interpretation as a lifestyle disease. Information underload, seeming like its clear antonym, was often interpreted in the unnecessarily expanded conceptual space of overload (as Bill Gates did). Another question is whether consolidation of the discourse on information overload may aid in ‘purifying’ information underload itself.

References:

- Lyman, S. (2011): What Does Biotech Really Suffer From? Information Overload, or Underload? X-conomy, Január 8.
<http://www.xconomy.com/seattle/2011/01/18/what-does-biotech-reallysuffer-from-information-overload-or-underload/#>
- Az IAEpedia (az Information Age Education (amerikai non-profit cég) oktatási anyaga:
http://iaepedia.org/Information_Underload_and_Overload#Information_Appropriate_Load
 [2016-05-08]

Information universe (Infoverse)

~ a kind of completeness or entirety of elements, things, or beings of things that are considered part of the world of information.

Expressions used with the same, or very similar, meaning: infoverse, information space, cyberspace, information galaxy, infosphere

Antonym(s): material universe, cosmos

Expressions from related concepts: Corpus Digitale, Gutenberg galaxy, information fortune

Which category? Although it often appears in scientific or professional environments, it is an everyday descriptive term that has a clear meaning regardless of context.

The phrase in the language system is very popular.

The repeated creation of the ‘information universe’ (in short: Infoverse) term is possible because speakers can use the single term to emphasize the only term that has long been used to describe the same quality of the material world in the ‘cosmos’ sense – outside which there is nothing more.

The entirety, the cosmos of the world of information that is also constantly expanding – this is the shared and accepted meaning when using the ‘information universe’ concept. The only difference is where various people draw the lines of the universe they speak of, and the pieces of information that belong there.

When zettabytes and yottabytes start flying (brontobyte gets ready) we can know that the total mass of the digital (and digitally measured) information output is used to signify the size of the information universe – while this is only the digital part of the entire information universe, the Corpus Digitale. (When the World Wide Web was created, many called the WWW the information universe, but today, this is less and less typical).

For example, the interpersonal information universe is partially outside this digital universe, but some use it for even narrower categories: in the content industry, for an information universe created by users, or market researchers for the user infoverse.

These are, in fact ‘information microverses’. (Microverse is, according to the popular interpretation is a limited place that takes upon the characteristics of a universe, but only in a small size, as itself is part of an even more comprehensive complex.) This, however, does not mean that talking about information universes would be pointless. It can be interpreted as the most comprehensive dimension of information amassed and available in the given era at any age, even if the Gutenberg galaxy of the book era, the McLuhan galaxy of electronic media, and

the Neumann galaxy of the digital world are all microverses. (As it captures not its entirety, only the dominant mode of information – it is no accident that the metaphor is only a ‘galaxy’, reflecting the partial nature). However, they rightly claim that libraries were earlier in the centre of the information universe, but now, they are mere regional nodes. The emblematic interface of the information universe is the screen.

However, if we do not accept the interpretation of ‘the entirety of information’, but ask what the information universe actually is, we may discover some interesting interrelationships. “The information universe is nothing but the reflection of reality in human conscience, and the information created by this during logical classification” – wrote Janusz Banczerowski (1980), i.e. the information universe is ‘inside’, not among the bits, and is captured by language (Banczerowski, 2001).

However, our thinking does not stop here. If the growth of the internal information universe replicates the outside material universe more and more, it gets thicker, it starts to have its ‘physics’, when does it become a real being? What’s more, is it not possible – as many ask – that our present world is nothing but the “sight” of an information universe, a three-dimensional hologram?

On our part, we do not wish to carry on this train of thought any further, we merely signal that physicists arrived here from the reverse direction. When they speak of the information universe, they very seriously think that information has a role in the construction and interpretation of the material world and cosmic macrostructures as information is an important component of the material universe. Accordingly, in this vocabulary, information universe means the information side and component of the universe (astronomists and physicists organise many conferences with this name).

EVALUATION AND RECOMMENDATION: Nothing proves the success of the term better by the fact that the original metaphor is often built forward. Regarding the Internet, we were worried that “lacking appropriate standards, the information universe, created with a lot of energy, will destroy itself”. The birth of the information universe was the Infobang (to the analogy of the Big Bang – Metatecture, 2016). It became a bit of a proverb, as well: French Anthropologist Claude-Lévi Strauss (1908–2009) is quoted as saying that “the information universe has expanded, but at the same time, the interpretation universe is getting smaller”. Clearly, it has entered the language system as a successful and understandable term despite the fluctuations of its interpretation. If along with the conceptual clarity, the clarity of interpretation is also kept (and not confused by the parascientific-esoteric “morphogenic field, akasha, information mind-field” created by ‘Universe’), it may be a useful verbal tool for a long time.

References:

- Banczerowski, J. (2001): A nyelvtudomány paradigmái. Magyar Nyelvőr 1, 1-29.
http://real-j.mtak.hu/6077/1/MagyarNyelvor_2001.pdf
- Banczerowski, J. (1980): Az információ és a metainformáció a nyelvi közlés struktúrájában. Nyelvtudományi Közlemények 1–2, 83–101.
<http://www.nytud.hu/nyk/reg/082.pdf>
- Metatecture: Infoversum or the fragmented vs. defragmented infospace.
<http://www.stubenmusicstudio.com/metatecture/archives/41> [2016-02-20]

Information utility

~ in the analogy of water, sewer, and energy systems, a physical and connected business infrastructure, including computers and communication networks, that provides access to basic and value-added information services. With these, anyone can access the needed information anywhere, at any time, easily, quickly, and cheaply.

Expressions used with the same, or very similar, meaning: information infrastructure, information ecosystem, information superhighway

Antonym(s): private information services

Expressions from related concepts: information public goods, information resources

Which category? A technical term used in the intersection of information economy and information policy.

The phrase in the language system is finding its place after decades of uncertainty and multiple re-discoveries.

The concept was first used publicly by John McCarthy, a pioneer of the Information Age, in a 1961 lecture in which he foretold, based on the then-forming practice of computer time-share technology that in the future, an information utility based on that may come to life. In, 1965, a Western Union director put forward an ambitious plan for the realisation of a nationwide information utility, that would provide its subscribers with efficient and economic access for business and other goals (Carr, 2009).

The idea of an utility stayed popular, as the computer industry and the telecommunication sector started to merge ever quicker from the end of the 70s (this was first reflected by the shared name ‘telematics’, and later, the rather tautological ICT, information and communication technologies). Users of the term, until the mid-90s, referred to information infrastructure “realised in the future”, in the system of one of the most influential visionaries, Japanese Yoneji Masuda, the Global Information Utility (GIU) became of central importance: “in the information society of the future, the information utility will become the basis of information value production, therefore it can be called the social symbol of information society”. (Masuda, 1988)

In the mid-90s, information superhighway and ‘global information infrastructure’ (GII) became very popular, but by the end of the 90s, it became clear that the Internet itself became such a ‘superplatform’ that could ensure access to all information services – by making almost everything, from live conversation to

electronic media content to objects of digitised public collections, available, on almost all carriers.

In fact, early, regular post services, and later, telephone networks all functioned as information public goods, but the brave idea was definitely realised in the world of flexible data transmission (fibre optic/cable, radio, or laser broadcast) techniques and universal end devices (computers, smartphones, tablets, screens, wearables) created in the mature digital culture. This is exactly why information utility as a 'label' appears more and more as a marketing element of a special new service: first, the so-called application providers of business used it, today, companies in the computing cloud business promote it so that people will store information content and the software that manages it would be stored in central storage instead of the users' own devices.

EVALUATION AND RECOMMENDATION: With the translation of Masuda's esteemed volume, the expression entered multiple professional dictionaries, but in the 90s, journalists and young researchers often credited whoever they heard or read it from first with creating the concept. It may remain part of the vocabulary if we use it consistently, in the correct sense.

References:

Carr, N. (1965): Cloud computing, circa. Rough Type blog, 2009 Nov. 28.
<http://www.roughtype.com/?p=1307> [2015-03-26]

Masuda, Y. (1980): The Information Society as Post-Industrial Society World Future Society

Information utopia, infotopia

~ an ideal state of society created by the further realisation of information megatrends that promises solving many acute problems of the present.

Expressions used with the same, or very similar, meaning: Computopia

Antonym(s): digital distopia, information anarchy

Expressions from related concepts: singularity, post-information society, post-capitalism

Which category? A professional word creation.

The phrase in the language system has filtered from scientific jargon to the language of the press, but it is used very rarely.

In the final chapter of his 1980 book, Yoneji Masuda one of the most original theoreticians of information society drafted up his Computopia vision. According to his own definition, this is an “ideal global society that can compel multi-centred, multi-layered volunteer groups of citizens to action for shared principles and goals”, with computer mediation and support, of course, respecting time limits.

His vision of the Computopia did not diffuse, and while many advocates of information society are often said to be unnecessarily optimistic and utopian, the anti-utopias, drawn up from the side of danger, of the future ruled by digital technology have always been more popular. If someone (e.g. Neal, 2005) believed that an information pressure point may be alleviated (e.g. making huge information sets manageable), even simple solutions could easily be considered utopias. Thus, the concept has become a sort of verbal weapon in the hand of people who see positive images of the future as danger.

Maybe Cass R. Sunstein was also thinking of them when she claimed that dedication to a hoped, but realistically imaginable world where the number of positive promises is higher can be taken. Access to the entirety of human knowledge, efficient information collection, sharing, and prediction technologies point in the direction of a collective rationality that seems utopian, but is actually a very realistic and imaginable idea of the future. Sunstein created the expression meant to describe this, that he also used as the title of his book, as Masuda had once done with Computopia: with the portmanteau of information utopia: infotopia.

And Masuda and Sunstein are not alone in this. The image of an information society that, with a new wave of information and knowledge technologies, not only adds to developing living circumstances and social relationships, but all abilities of man and the entire human community is attractive to more and more people, and has at least as much relevance as sombre dystopias. This was a sum-

mary of the ideas of Frenchman Pierre Lévy, but we could also have quoted other and similar sources as well.

EVALUATION AND RECOMMENDATION: Infotopia is not a very well created word, as for people who do not know its meaning, it is not easy to understand when it is spoken. As information utopia, it may stay permanently in the professional vocabulary, its face will be decided by the direction the world itself takes: towards dystopia or utopia.

References:

- Masuda, Y. (1980): *The Information Society as Post-Industrial Society*. Institute for the Information Society
- Neal, J. G. (2005): Information Anarchy or Information Utopia? December 9.
<http://chronicle.com/article/Information-Anarchy-or/2773> [2015-09-23]
- Sunstein, C. R. (2006): *Infotopia: How Many Minds Produce Knowledge*. Oxford University Press.

V

Information value chain

~ actions performed with information in a defined order, during which, information takes the route from being created to being used by the end user(s).

Expressions used with the same, or very similar, meaning: information utilisation

Antonym(s): information loss, information trap

Expressions from related concepts: information provision, information entrepreneur, information richness

Which category? The value chain is a strong descriptive concept of economy theory and logistics. It may, naturally, be used for the information segment of economy, but that field is not at all developed.

The phrase in the language system occurs rarely, but the challenges of Big Data gave its use a new wind.

In the beginning of economic history, in the world of the first information goods, there was a direct relationship between producer and consumer. Later, as the number of potential customers and potential products increased with society and economy becoming more complex and transnational, and conquering distance, getting the information goods to the desired points, gained a more and more prominent role, the value chain of valuable information got longer and longer. News collectors who created coherent raw news material for users from notices of multiple news sources must have been the first step. Their added value was collection and processing, and thus mediatisation entered the process.

It was a reason, even before the Internet explosion, for the introduction and strict consideration of the term by the convergence of the great fields of the information industry: telecommunications, IT, and the media-driven content industry. This process 'mixed' value chains, they could use both horizontal (the unification of dramaturgically parallel sections) and vertical (uniting steps of the value chain, making the chain shorter) integration due to the options of simplification allowed by these parallels.

The next big jump of businesses moving to the Internet and information services expanded by numerous new branches was platform integration: network

applications and solutions offered an opportunity to include these new forms of transmission in the value chain and remove multiple older ones. (This is how electronic commerce and on-line distribution executed tens of thousands of retailers and shops all over the world.) By simplifying applications further, some information products and services almost returned to the beginnings of the economy history process: manufacturers and consumers can find each other in the network space (e.g. writers and readers without publishers, promoters, and copyright people, or advertisers and designers, and many others). Naturally, some forms of mediatisation remain to some extent (web use itself, the utilised software, the payment module, etc.), as it is impossible to grow completely independent of it.

EVALUATION AND RECOMMENDATION: In many languages it is better to use the genitive, ‘the value chain of information’.

References:

- Clemons, K. (2016): Big Data and the Information Value Chain. Clear Insight. April 26.
[http://utegration.com/clearinsight/big-data-and-the-information-value-chain /](http://utegration.com/clearinsight/big-data-and-the-information-value-chain/)
Hammergren, T. C. (2009): The Information Value Chain: Connecting Internal and External Data.
In: Data Warehousing for Dummies, Chapter 19. Wiley,

Information value, Value of Information (VOI)

~ a quantifiable value resulting from an action of measurement that demonstrates the balance of the given information is in its context of use, comparing resources allocated to its acquisition to the positive benefits expected from its use.

Expressions used with the same, or very similar, meaning: the price of information

Antonym(s): useless information, fake information

Expressions from related concepts: information gain, information economy, information efficiency

Which category? An information science and information theory technical term.

The phrase in the language system may use multiple grammatical constructions for the same meaning; ‘information value’ is only one of the competing versions.

‘Information is value’, as many say. All this means is that information is generally one of the things that carry value. The value of the individual pieces of information is measurable and expressible is a much stronger and more exact statement. Ever since there were information products and services, they had an allocated value, typically in money, similar to the world of goods. In today’s information economy, the other important aspect along with value is credibility, and the third one is legal value: today, there is an incredibly complex legal construction representing the ownership and use issues of information, in daily use on both the national and European Union levels (Tarr, 2009).

We consider a piece of information more valuable without measuring it if we presume it to be more useful, as it created a larger change in our processing system.

These principles can be translated fully to the mathematical-probability language of information theory (Howard, 1966). There is a reason that an independent information value theory exists. And as in this closed, numeric world, the information values that belong to the individual signs may only be calculated by allocating probabilities, there are few universally accurate formulae, as the value of information depends on the type of information.

Thus the applied fields (artificial intelligence, data science) that use information theory have developed their specific formulae, where the calculation of information value generally start with the definition of the weight of evidence. Economic science that mathematicises information games also uses the measure-

ment of information value in this role: it must be calculated in perfect, imperfect, and incomplete information situations in order to make the appropriate decisions and behaviour selections.

EVALUATION AND RECOMMENDATION: As all the alternative structures mean more or less the same, we may only hope that the need to clear up terms will arise as the scientific discourse behind the term becomes more differentiated, and thus 'information value' will be able to solidify.

References:

Howard, R. A. (1966). Information value theory. IEEE, Transactions on Systems Science and Cybernetics (SSC-2), 22–26.

Information vault

~ a virtual storage service that offers private and safe storage and searchability of valuable documents and data.

Expressions used with the same, or very similar, meaning: –

Antonym(s): shared content

Expressions from related concepts: information storage, data security, data protection, archives, secret administration, deposit

Which category? A professional term, the name of a special service type.

The phrase in the language system is gaining some strength and slowly becoming more known.

One of the important characteristics of information society is that fortunes, values, and the associated power are in information itself, a large part of which does not exist in a material form, but in virtual space. In order to let owners of valuable information have their information wealth in safety in the virtual space, they put it in information vaults. Their data and documents may thus be locked away, and made inaccessible to unauthorized persons.

The physical aspect of information vaults is a folder, directory, or even entire partition stored on a safe server. Information vault managers control access using various pieces of security software, installed and managed by one or more administrators.

This service is getting more and more popular. Vault access is not necessarily in the hands of the subscriber, often entire families or partners can access the sensitive information in the vault. Multiple information security companies specialise in subscription-based information vault services.

EVALUATION AND RECOMMENDATION: A defined service received an ingenious and easily remembered name, known only by those who know and use it. The possible diffusion of the concept is strictly connected to whether more and more people will use information vaults.

References:

Hietiko, E. (2014): Training SolidWorks 2014: Mechanical Design in Practice. Books of Demand, 123–126.

What is an Online Information Vault? AboutLife, 2015. September 2.

<https://aboutlife.com/blog/Estate-Planning/What-Is-An-Online-Vault> [2015-11-10]

Information visualization

~ turning abstract information spaces and structures into picture objects that support reception and understanding.

Expressions used with the same, or very similar, meaning: visual representation of information, data visualisation

Expressions from related concepts: information aesthetics, infographics, information arts

Which category? Information science and information aesthetics term.

The phrase in the language system is very well diffused as an umbrella category.

One of the ‘founding fathers’ of information visualisation, Edward Tufte said that if we wish to express the relationship between 2-3 pieces of information, we should put them in a sentence. If the number of pieces of information is between 3 and 20, a table should be used. If the number is even higher (and with the larger numbers come more dimensions of relationships), graphic visualisation should be used (Tufte, 1991).

Therefore the point of the process is “the process of internalising knowledge by perceiving information”, behind which we must always see and look for a previous processing process. And while the primary channel of perception for people is optical, it is no wonder that presentation basically (but not exclusively and necessarily) takes a visual form. Along with static output, there are more and more dynamic (animated, movie) and interactive solutions (data downloaded and visualised in a unique constellation based on the user’s intent).

Andrews (2002) emphasizes that visualisation in itself is not enough: the requirements of organisation and structuring as well as use of additional information that aids interpretation (navigation, direction, explanations, etc.) must be considered compulsory elements. Techniques and forms of visualisation performed on large masses of data, with an artistic quality, with a large added value, describe a type of information visualisation, infographics, that is going up these days.

Information experts have long been using information visualisation. Lima (2014), overviewing the entire cultural history of structured information visualisation around a tree structure, discovered this method even on Mesopotamian clay tiles and ancient Indian images, but in the Mediaeval age, dozens of complex and artistic information visualisations are found.

Information visualisation took centre stage immediately before the Internet explosion, but after one of the great quantity leaps of machine data processing, in the late 1980s, when the National Science Foundation made it an independent

research area in the United States (Visualisation in Scientific Computer Science, 1987).

Interestingly, information technology innovation generally takes a business – science – government route, but for visualisation, the ground-breaking area was science, and business applications came later.

Information visualisation itself also developed in the meanwhile (Spence, 2014): we can think of pretty images not only as a result, but an object that forces the continuing activity of visual analysis and evaluation.

EVALUATION AND RECOMMENDATION: Where instead of ‘visual’ other words are chosen as the translation in other languages, the feel of these words reflect a more comprehensive meaning, as visualisation immediately calls up the context of eye and visual experiences, although changing from one form of signal to another may have multiple ways and final states, everything must not inevitably turn into images or moving pictures (e.g. acoustic rendering is a recent trend).

References:

- Tufte, E. R. (2001): *The Visual Display of Quantitative Information Graphics* Pr.
- Andrews, K. (2002): *Information Visualisation. Tutorial Notes.*
<http://www.inf.u-szeged.hu/~dombi/visualization/Keith%20Andrews%20Information%20visualization%20Graz.pdf> [2016-05-27]
- Spence, R. (2014): *Information Visualization. An introduction.* Springer.

W

Information warehouse

~ a form of information commons. An organised collection of data that contains information from an organisation's data collecting and providing activities, as well as systematises and re-structures them for easier handling and decision-making.

Expressions used with the same, or very similar, meaning: data storehouse, vertical portal

Antonym(s): information vault

Expressions from related concepts: open data, database, data lake, informative sites, information collection, information broker, information service, information public good, information commons

Which category? Unlike data warehouse, a term from company information management, information warehouse is an everyday term, even though numerous institutions use it with some adjective that reflects the nature of information, in a proper noun form.

The phrase in the language system is very popular in English-speaking countries; on the other hand, it has not diffused at all in other languages.

Data warehousing is the soul of corporate information management: every piece of information of note must come in here so that, through pre-formed channels, or using special methods (data mining), information necessary for decision-making on the management and analyst levels to be extractable and visualisable.

Information warehouses are typically open, integrated collections of resources that serve knowledge workers and information brokers. A 'topic-oriented', informative website, typically available through the Internet, that provides data regarding a single topic, in exhaustive detail, in an integrated way (collecting data from multiple sources). Unlike data warehouses, where various data classes change cyclically because of the workflow, the information set of the information warehouse cannot be changed once it has entered it.

Information warehouses typically exist in business and in trade, collecting data on a sector and its actors (business and trade information warehouses), however, there also are numerous healthcare (and plant healthcare) oriented ones. Alongside scientific and documentary collections, the British Commonwealth also possesses a large data warehouse.

Information warehouses may be structured (organised in a way that makes research easier, such as vertical portals or vortals) or semi-structured (where, because of the quantity of data or lack of resources, data comes in with little organisation).

EVALUATION AND RECOMMENDATION: As a translation, we recommend the information warehouse form. The popular information locker expression only expresses that ‘information is stored somewhere’, and is not the name of an information service. Therefore in the professional environment, information warehouse may rightfully be a name alongside information public goods and information commons.

References:

Laha, A.: On the issues of building information warehouses. COMPUTE ,10 Proceedings of the Third Annual ACM Bangalore Conference.
<http://arxiv.org/abs/0910.2638>

Information warfare

~ a new type of warfare, in which attacks against information systems and the military use of information devices become a vital part of warfare.

Expressions used with the same, or very similar, meaning: cyberwar

Antonym(s): traditional warfare

Expressions from related concepts: information games, information operations, information politics, hackers

Which category? A military science and security policy term.

The phrase in the language system is firmly rooted and widely known.

Although Budapest-born Thomas P. Rona (1923–1997) had drawn attention to communication and information channels as easy targets, very vulnerable against a possible military attack (Rona, 1976), information warfare only became a fully accepted military term after the theft of American operational information in the 1990-91 Gulf war. From this, however, libraries' worth of literature grew out, and it included every form of operations with an information content that had existed before the digital age: psychological warfare, the satellite and remote sensor related technologies of reconnaissance and monitoring, message encryption and enemy message decryption. Recently, cutting edge information technology based military innovation (for example, drone technology or military robots) were added to this arsenal.

The most characteristic, unique, and most discussed area of information warfare is when combat happens not in physical reality, but in cyberspace. Its milder version is when the opposing parties attack each other's information networks (or protect their own). On the other hand, its extreme form is the inclusion of every civilian target that is exposed to computer-controlled systems in the operations: crippling energy companies, banks, stock exchanges (the so-called Economic Information Warfare, EIW). These vulnerable networks are referred to as the critical information infrastructure.

EVALUATION AND RECOMMENDATION: In the conceptual framework in which information warfare is now found, and in which this often used expression has multiple 'competitors' with close meanings; considerable changes are expected in the near future. This is because information warfare is not a question of technology: the traditional methods of resolving conflicts are taken over by something

completely different, and in parallel, the vocabulary of international security systems is also being rewritten.

References:

Rona, T. (1976): Weapon Systems and Information War. (Interim report for the Boeing company)

Information waste

~ a measurable loss stemming from the insufficient management of information as an economic factor in a corporate-organisational context.

Expressions used with the same, or very similar, meaning: information underuse

Antonym(s): information gain

Expressions from related concepts: information efficiency

Which category? An information and knowledge management term.

The phrase in the language system has not diffused outside the corporate economy literature, but in its occasional uses, the meaning can be understood without any previous knowledge.

Managing information environments, buying, producing information, transmitting and utilising them inside the organisation is mostly an efficiency question at companies, may they be producers or service providers. The so-called knowledge companies (that use knowledge as raw materials, resources and also produce it), and knowledge-heavy companies, where value creation is done by knowledge work instead of physical work are especially sensitive to the appropriate information process organisation.

As using information is necessary wasteful to a certain extent (as the necessary pieces of information can only be ensured by inputting them into processing systems as part of a greater set, as they cannot be planned perfectly and in a closed way), therefore loss is programmed into even the best planned systems. However, how much is lost and how information is utilised does matter. Too many losses may have numerous causes and reasons:

- the quality of information is questionable, therefore a trust deficit is created and information is not used
- processing is made difficult by misunderstanding and misuse resulting from unsuitable definitions, metadata, and interpretations
- more operations than necessary are performed on the same information set, or multiple versions are circulated
- the information that gets into the system is not the needed one, or is not on the needed level of processing
- information does not get everywhere it is needed
- the company does not react to the obsolescence of information with the appropriate renewal policy
- information gets into the system at a higher price than what it is actually worth

Consultancy companies in the fields of information and knowledge managements offer and develop methodological solutions developed to decrease losses that occur because of the above reasons. Therefore the subject of information loss has an independent literature in the economy and managerial science fields that has been growing for about 10-15 years.

EVALUATION AND RECOMMENDATION: The meaning of the phrase was sharpened into its current, clear form in the course of professional debate. It is expected to become better known in the near future as it can have an effect on ‘neighbouring’ discourses.

References:

- Lean: <http://datatovalue.co.uk/lean-information-management/> [2015-03-27]
Franssila, H. (2012): Information Waste. Qualitative study in manufacturing enterprises In: Moller, Charles – Chaudhry, Sohail: Advances in Enterprise Information Systems II. Taylor and Francis, 105–111.

Information waterfall

~ a computer-controlled waterfall that, by coordinating timing and spatial solutions, makes it possible to visualise text and images.

Expressions used with the same, or very similar, meaning: vapour display, graphic waterfall

Expressions from related concepts: information projection, light arts

Which category? The invented name of a single information technology process.

The phrase in the language system will only exist as long as the technology does.

In the world of exhibition technology, in recent years, more and more attention has been paid to alternative solutions that had earlier been unknown to the public or had not even existed. Museums, exhibition workshops, and art shows are looking for new ways to be more memorable and diverse, and to draw the attention of potential visitors. With special technical solutions building on visual and sound elements, they want to make the experience better, and attempt to draw in even people not interested in traditional exhibitions. The information waterfall is a very visual example of this.

The so-called AcquaScript technology is an invention of German artist Julius Popp.

With this method, bitmap-like texts and images are displayed by artificially sprinkling water. The original AcquaScript module is 2 meters long and has numerous magnetic valves that can all be closed and opened quickly. The valves are closed and opened with computer timers, therefore by synchronising them, impressive images and texts can be made. For an 8 metre waterfall, 60 litres/minute of water is used on average. (Naturally, quantity depends on the text and images.) The performance is generally made even more memorable by audio and light shows.

EVALUATION AND RECOMMENDATION: Information waterfall and information cascade, that has a set meaning, are not the same, even if their translations often – erroneously – match.

References:

Acquascript.co <http://aquascript.co/wp2/wp-content/uploads/2012/03/121119-AQS-Brochure.pdf>
[2015.07.20.]

Technovelgy.com <http://www.technovelgy.com/ct/Science-Fiction-News.asp?NewsNum=1435>
[2015.07.20.]

Information worker

~ an employee who, instead of producing physical goods, creates, develops, shares, handles, or even consumes information in working hours.

Expressions used with the same, or very similar, meaning: non-manual worker, knowledge worker, symbol processor, white-collar worker

Antonym(s): physical worker, blue-collar worker

Expressions from related concepts: information and knowledge economy, information and knowledge sector

Which category? A technical term in economic science.

The phrase in the language system has, surprisingly, not really diffused, although professional acceptance of the term is high.

Peter Drucker created the term ‘knowledge worker’ in 1959, to demonstrate that, by the 21st century, workers and their productivity would become the most valuable element of wealth in the world of companies and large organisations (Drucker, 1959). However, as, from the early sixties, information and knowledge richness started to separate in economy statistics systems, the world of work also started to differentiate between information and knowledge work.

Accordingly, other contemporary definitions of information workers underline that they are workers with tasks that relate to decision support using information or actions, or creates pieces of information that affect other people’s decisions or actions (Rasmus, 2012). All this means that routine tasks that require little creativity and thinking are considered parts of this group, and it is no accident that even these types of jobs are constantly subject to automatization and mechanisation. Typical information workers of the early 20th century were journalists, typists, stenographers, human computers (workers performing continuous calculations in their work), and advertisement experts, and the term ‘information work’ was born because of them, in 1904. Today the category mainly includes accountants, customer relationship handlers, call centre workers, etc.

EVALUATION AND RECOMMENDATION: ‘Clear’ job descriptions are harder and harder, the question is more and more the ratio of information work and other types of work one does. Because of this uncertainty, it is hard to gauge how long the present number of categories will be suitable to describe the nature of work, and when a more detailed conceptual network will overtake their position.

References:

Drucker, P. F. (1959): *The Landmarks of Tomorrow*. Harper and Row.

Rasmus, D. W. (2012): What is an Information Worker? Serious Insights, June 24.
<http://www.seriousinsights.net/what-is-an-information-worker/> [2014-08-26]

Information-centered world view

~ an approach and view that builds the process of cognition around the phenomenon of information on the highest level with the change-over from energy-centered origin points.

Expressions used with the same, or very similar, meaning: information turn, paninformationalism, information perspective

Antonym(s): an energy-centric world-view

Expressions from related concepts: information philosophy, information mode, information utopia

Which category? The expression did not find a 'home discipline' where it could have a place as a strong term yet. Therefore, for now, it is only a conceptual innovation that shows up in multiple, independent professional discourses. Its fate will be decided by whether it rises up to become an independent subject of examination, or whether it will only aid in the analysis of other subjects with its occasional use.

The phrase in the language system, due to the above, only appears occasionally.

Hajnal Andr ka and Istv n N meti noticed that the world-view, based on which everything, every detail of learning about the world, every piece of knowledge finds its place, is typically defined by a base principle that changes age by age. Structures of meanings start from and feed back to the world-view, this organises cognition in general, and in every individual case to process. Thus we may also define it as the most complex information configuration.

Social form	World-view	Community formula (number of members, from-to)
Fishing – hunting – gathering community	Static world-view	Horde (25-50) A group of extended families (50-150)
Agricultural society	Dynamic world-view	Village communities (150-8000) City/alliance of cities (4000- 4 million)
Industrial society	Energy-centric world-view	National (1 million – 60 million) National/regional (8 million – 2 billion)
Information society	Information- centric world-view	National/multiregional (800 million – 4 billion)

If in the age of industrial society, the idea of power, energy, and the mechanical principle was this node, by now, in the age of information societies, it must be information.

It is awe-inspiring, but this is, by now, natural not only in everyday life, but in the strictest scientific conceptual environments, as well. And the information turn does not only occur in social sciences. A number of philosophers do not add information to the principles of matter, space, energy, and time, but place it above them. Biologists have thought about how their gene-centric world-view became information-centric (Vanechouette, 1997).

Mike Eisenberger's concept of "information perspective" (2012), i.e. watching the world through the glasses of information may be considered a variation of the concept.

EVALUATION AND RECOMMENDATION: The world-view may materialise in scientific, artistic, and religious guises, but the information turn is characteristic of all of them. Maybe mostly of arts: as it can part with tradition that binds meanings, many alternative approaches pointing to information centeredness often appear first in artistic-experimental forms. This phenomenon deserves much more attention than it receives now; we trust that sooner or later, it will become a popular topic, and the notoriety of the concept may also increase on the coattail.

References:

- Andréka H. – Németi I. (1988): A számítástudomány alapjai: alapkutatás. *Filozófiai Figyelő* 4, 26–55.
- Vanechouette, M. (1997): Memetics maillist Replicator issue June 10.
<http://cfpm.org/~majordom/memetics/old/0140.html> [2016-03-24]
- Eisenberg, M. (2012): Information Alchemy: Transforming Data and Information into Knowledge and Wisdom March 30. https://faculty.washington.edu/mbe/Eisenberg_Intro_to_Information%20Alchemy.pdf [2015-11-29]

MEANING GROUPS

Principal categories

Information flow
Information community
Information configuration
Information bubble
Information group
Information continuum
Information ladder
Information ecosystem
Information systems
Information neighborhood
Information universe
Information spectrum
Information space
Information diffusion
Infosphere

Basic science of information

Infocommunications
Information systems
Information theory
Information philosophy
Information methatheory
Information science/Information scientist
Informatics
Informetrics
Informology

Information peer disciplines

Infodynamics
Information astronomy
Information philosophy
Information physics
Information geography
Information logistics
Information archeology
Information anthropology
Information geometry
Information ecology
Information pedagogy
Information statistics
Information history

Information types

Pseudo-information
Disinformation
Quasi-information
Meta-information
Hidden information
Misinformation
Perfect information
Imperfect information

Information status

Malthusian law of Information
Information glut
Information abundance
Information deficiency
Information quality
Information shadow
Information pluralism
Information distance
Information diversity
Information density
Information scarcity
Information fragmentation

Information actions

Information transmission
Information exchange
Information processing
Information seeking
Information avoidance
Information operation
Information style
Information actions/activities
Information behavior
Information filtering
Information mapping
Information compression
Information recycling
Information hunting
Information loss

Relational concepts

Information efficiency
Information demand
Information gain
Information underload
Information receptiveness
Info-guilt
Infotention
Information needs

Dark side

Information jungle
Information poisoning
Information prison
Information trap
Information deficit
Information black hole
Information quarantine
Information fog
Information mafia
Information mess/Information garbage
Infodump
Information maze
Information crisis
Information mess
Information pollution
Information distortion
Information blindness
Information waste
Information implosion
Infornography

Approach to the information

Information-centered world view
Information turn
Information Nirvana
Information realism
Information utopia, Infotopia
Information awareness
Information religion
Paninformationalism

Everyday information culture

Information alchemy
Information literacy
Information commons
Information culture
Information footstep

Information erudition
Information heritage
Infotainment
Information technology
Information dissemination

Visual dimensions

Infographics
Information aesthetics, Info-aesthetics
Information architecture
Information visualization
Information arts
Information mapping

Social reflection

Information famine
Information inequality
Information elite
Info-rich, information wealth
Information generation
Information cascade
Mode of information
Info-poor, Information poverty
Information society
Information terrorism

Library and Information Science

Information processing
Information discovery
Information fusion
Information request
Information extraction
Information repository
Information retrieval
Information richness

Information management

Information float
Information security-safety
Information assurance
Information processing
Information governance
Information logistics
Information management
Information audit
Information lifecycle management
Informaiton patchwork
Information strategy

Legal corner

Information liberation
 Information accessibility
 Information rights
 Information compensation
 Informational self-determination
 Freedom of Information, FOI

Politics and political science

Infoganda
 Information governance
 Information policy
 Information anarchy
 Information influence
 Information partnership
 Information luddite
 Information warfare
 Information power
 Information terrorism

Economic theory basics

Information commodity
 Value of Information (VOI)
 Information economy
 Information monopoly
 Information worker
 Information infrastructure
 Information public good
 Information Utility
 Information market(place)
 Information entrepreneur
 Information services
 Information property
 Information asset

Applied economics

Information broker
 Information value chain
 Infomediary
 Information bazaar
 Information partnership
 Information clearinghouse
 Information feudalism
 Information ratio
 Information costs
 Information warehouse
 Infomercial

Perfect information
 Imperfect information

Historical analogies

Information explosion
 Information empire
 Information civilization
 Information feudalism
 Information revolution
 Information capitalism
 Information age
 Information monarchy
 Information nomad
 Information socialism

Feed/body metaphores

Infowank
 Infogasm
 Information diet
 Information hunger
 Information digestion
 Informavore
 Information metabolism
 Information obesity
 Information bulimia
 Information fatigue
 Information asphyxiation
 Information diarrhea
 Information scent
 Information omnivore
 Information foraging

Medical metaphores

Info-fobia
 Information addiction
 Information healing
 Information hoarding
 Infomania
 Information junkie
 Infoholic
 Information pathologies
 Information anxiety

Water-metaphores

Information cascade
 Information ocean
 Information deluge
 Information drought

Information tidal wave
 Information overload
 Information waterfall

Moral panic vocabulary

Information diet
 Information apocalypse
 Information bomb
 Information obesity
 Information bulimia
 Information disaster
 Information avalanche
 Information panopticon
 Information overload

Information games

Information asymmetry
 Information influence
 Information superiority
 Information power
 Information games
 Perfect information
 Imperfect information

Professions

Information broker
 Infomediary
 Information engineer
 Information worker
 Information commissioner
 Information officer
 Information proficiency
 Information entrepreneur

Weirdo's

Infoladies
 Information detective

Ragmen of information
 Information enthusiast
 Information star
 Information maven

Things (somewhere/around us)

Information station, Infostation
 Information Gas Station
 Information bus
 Information headset
 Information hotspot
 Information vault
 Information park
 Information island
 Information superhighway
 Information waterfall
 Infomercial

Chamber of mathematicians and programmers

Information hiding
 Information processing
 Information processing
 Information fusion
 Information request
 Information visualization
 Information poisoning
 Information gain
 Information window
 Information patchwork
 Information ratio
 Information repository
 Information fragmentation
 Information retrieval

INFORMATION ASSET

INFORMATION ASSURANCE

Disinformat

Information astronomy

In

This book revolves around a single word: information. This best known, most loaded expression of our age has no mercy: every day, we encounter newborn expressions that are searching for a place in a universe of words that expands at the speed of (literary) light. And even so, it is almost impossible to follow how reality changes when new words spurt into families of words.

And while we adventure in an information-rich reality, language joins us as a shadow companion. This is because we also analyse language itself. On the one hand, we may form an image about how it 'learns', how it 'adapts', and how it aids understanding.

The 252 selected words were divided into 28 categories, so that the areas of reality the given expressions refer to may be visible in groups. The Guide includes words from everywhere, and divides them approximately evenly. The layers of the information base lexicon emerge, special environments for users also appear (from economy to politics and law). Things, actors, actions, and processes separate. Words were organized around families of metaphors, too. It may be as interesting to start from categories as it is from the alphabet.

This Informatorium may be a good first step to decreasing the pressure of the Age of Conceptual Uncertainty.



INFORMATION EXTRACTION

Information famine

INFORMATION FATIGUE