Fleeting information freedoms of information societies

Introduction

Regarding information management, revolutionary in character and its future consequences, since Johannes Guttenberg's invention, was the directing of all investments (material and intellectual) one way. This complex process has been going on since the 1940s, ever since the creation of first computers. The technological development since was mainly geared toward the improvement of computers but also a specific spectrum of electronics, that for the daily use of radio and television and all sorts of related receivers and transmitters. The devices with time were becoming cheaper, smaller, more durable and, most of all, popular. The information they were able to manage and store (in digital form) were first symbols then images, sound and video. A satisfactory level of advancement has been reached regarding storage, transmission and local processing of information (regardless of geographic localisation). It encompasses automatisation of simple financial operation, word and media processing as well as complicated calculating functions such as weather changing patterns and other complex physical phenomena. This period, the "**digital phase**", has shown the power of digital information and the possibilities of processing it. Another great change occurred in the early 1990s – general access to information highways linking all computers around the world – or the "**network phase**". The most popular web, however not the only one, is the Internet with its services and information databases encompassing nearly all areas of human activity. Information technologies (IT) – the Internet and necessary equipment (special programmes) only theoretically enable us to actively take advantage of the information potential available. In practice, it turns out that the speed of on-going changes, the development of IT tools, the availability of all the more complicated Web services (media, e-banking, blogs, discussion groups and various portals), require us to continually update our knowledge about the available potential and our abilities. In result, there are many services which only the select few use, those who have the "information advantage" over the rest of society. Here, we are dealing with the **information exclusion** phenomenon. It encompasses those who have not possessed the required skills to use IT tools and Web sources and, therefore, are at a disadvantage in the modern world.

On the other hand, the other group of people, those who do have the necessary competences, are in a different type of danger – the **b-exclusion – or systematic limiting of their "information freedoms'**. **Hence it is impossible to consciously use all the information available, on the global scale, because it is beyond the physical and intellectual means of any individual**. It is estimated that throughout one's entire life, it is only possible to receive from the outside world about two terabites of information. Such amount of data can be easily stored on several PC discs. Due to this, it is becoming more popular to use information intermediaries. **These are old (TV, radio, press) and new (Internet) media as well as tools (information technologies) which purposely select and moderate the type of information they make available to people through the inflow of data that they provide.**

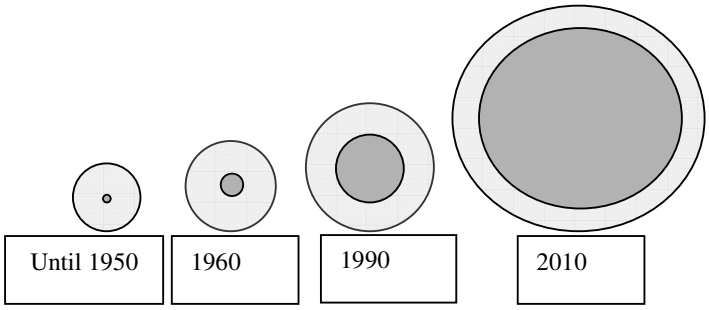
Information sources

Today over 90% of all created information is recorded in digital form (Chart 1). Every day the amount of information put on blogs is much greater than that available at the National Library and the Warsaw University Library combined, and those are only a small fraction of what is on the Internet. It is estimated that present day information sources are three million times greater than what has been written in all the books written so far. In 2006, 161 billion

gigabites (161EB) of information was created and this number is predicted to grow to one zettabite (1000 EB) by the year 2010[1].

The scale and direction of this inevitable process (of omnipresent digital information) can be illustrated by R. Murdoch and P. Meyer's predictions who forecast that by around 2040 printed newspapers will cease to exist[2].

Chart 1. Scale of change (1950-2010) of analogue proportions (light blue) to digital (dark blue) ones regarding information sources.



Source: By the author based on Enterprise Storage Group, Compliance Study, May 2003; Danny Sullivan, New Study Sizes Up the Web, www.clickz.com/experts/search/article.php/3512376, June 29, 2005; http://www.sims.berkeley.edu/research/projects/how-much-info-2003/ [January 2004]. Measuring the Data Mountain, "The Economist" 2003, Dec. 6. Financial Times, Nov. 12, 2003; THE ASSOCIATED PRESS, Tech Researchers Calculate Digital Info, From: The New York Times, March 6, 2007.

Access to such vast digital information sources is successfully, in 99%, controlled and limited administratively, technically and through information companies and people involved. These procedures are the first element in a process of monitoring of the offered information and deciding which information will be made available to the public. Regardless, the size of the remaining 1% is still so large that people who know how to use the potential of the virtual world need to use various tools in order to search, analyse and select the information they want. There is nobody that can do the filtering process on their own even regarding the most basic and common information sources on a global scale. An educated citizen of the world, regardless his competences, must use intermediaries, various information tools and 'receivers' such as TV, radio, press, information agencies and WWW sites. Resulting from this, especially due to the Web, is the phenomenon of duplicating good, reliable but unoriginal models.

A promise of information freedom, or direct access to source information, was Web 2.0. However, it still offers too much, valuable and also not so valuable, information for the average intellect to grasp. Still the use of dependable, constant sources of information while ignoring other, no less valuable ones, is an option that most of us choose.

[1] The Associated Presss, *Tech Researchers Calculate Digital Info,* [in:] The New York Times, March 6, 2007.
[2] The Economist, *Who killed the newspapers?* August 26th 2006.

Table 1. Most popular sources of information [%]

Which source do you use first when you look for information	Internet	TV	Press	Periodicals	Radio
About products	96	2	1	2	0
About computers or other technological products	89	2	1	7	0
About interests, hobbies	88	2	1	8	0
About favourite music/recordings	84	4	1	6	6
About newest video/PC games	80	5	1	14	1
About finances., stock Exchange	72	10	17	0	1
Abort entertainment (films, concerts, TV)	68	10	19	1	2
For fun	59	30	2	2	6

Source: http://www.online-publishers.org/pdf/opa_generational_study_sep04.pdf (July 2007).

At the same time, commercialisation increasingly takes advantage of Web popularity functioning on all levels of communication in the Internet. This is particularly visible regarding the exchange of information on discussion forums, chats and blogs, as well as when analysing popular portals with target groups of various marketing endeavours. This type of *Internet amplifying*, according to employers' expectations, successfully monitors virtual world content, especially Web 2.0. It is estimated that blogs, one of most popular Web 2.0 programs, are, in 90% of cases, created as a result of company orders[3]. This means that a notion of unbiased sources of information within the Internet is quickly becoming debased.

Information forms

The printed media normally leave recipients a lot of information freedom. This is because of the virtually unlimited imagination for sound, image and motion which inspire individualism and creativity. The radio is the same except there is no freedom for sound imagination. Multimedia information, on the other hand, provide recipients everything, therefore, limiting the need for any kind of imagination from the recipients.

The prepared information (with the use of specialist equipment), with high quality image, sound and motion picture, make it attractive and easy to assimilate by recipients, in contrast to the traditional. This is a proven fact looking at the success of many commercial projects where specialist equipment rates the quality of the broadcast and indicates the way and range of its modification[4].

We can witness here a return to the Medieval Biblical idea of *pauperum* – or care for clarity of communication. This concerns not only content but ways of communication with machines – or the so-called iconography, the language of symbols and images[5].

Personalisation

The prepared multimedia broadcasts, together with computer and Web interactivity as well as personalisation, present in virtual media, limit recipient information freedoms all the more. People receive a growing number of information, in condensed form, absorbed by eyes and ears. A successful catalyst in this process, aside from form, is **personalisation** – or

[3] *Splogging is clogging up blogosphere,* Financial Times, Oct. 31, 2006.
[4] Włodzimierz Gogołek, *Hit z komputera,* [in:] Polityka, 45/2006.
[5] This type of communication is called graphic interface.

adaptation of the information to individual expectations and predispositions of recipients. Due to these processes or perfecting form and personalisation, imagination lies idle. People are not required to think intellectually in order to process the information. In consequence, due to the natural impulse of seeking easiest way to accomplish things, as well as the attractiveness of the broadcast, we choose these new **sources of information**. The most popular are those which are most attractive in form and fulfil the recipients' manifested as well as suppressed expectations (personalisation).

Basic data determining personalisation are: sex, age, individual interests and many other factors, gathered by modern data researchers who specialize in "personalising media". This is possible thanks to the available technology, which not only enables broadcasting of multimedia information but also gathers data about its recipients. And this is not just information consciously offered by people. Enormously valuable is information which is gathered from Web users based on which sites they visit. It indicates their interests and the scope of their intellectual activity. An example of application of such possibilities is the *Lifetime Individual Visitor Experience (LIVE) Profile*™ project. It enables the creation of an individual user profile on the MySpace portal. The personalisation algorithms used in LIVE are divide into two categories. The first is "interest-based targeting" - algorithms categorizing people according to their interests such as sports, fashion, finances, computer games, cars and health. The second includes hundreds of subcategories where, for example, sport fans are divided into groups according to sport of interest, ie. basketball, football, skiing, while films fans are grouped according to the types of films they prefer or actors they like.

The internaut profile acquired this way can be used in many ways – from commercial ones, targeting specific advertising, to entertainment, choosing precisely chosen music to conscious or subconscious recipient expectations (last.fm, Pandora.com sites).

Companies such as Google, AOL, or Microsoft routinely follow internauts in their searches of the Web and send advertising connected to the people's interest. Facebook went even further in their process of indoctrination as it sends advertising based on the user's friends' behaviours (ie. what they recently bought), without their knowledge[6].

What is done with other data gathered from internauts, excluding marketing purposes, such as manipulation of political opinion, etc. we do not know as there is no data available.

Content available on the Web is a basic source of information on people's daily lives, culture, entertainment and even science (Table 1). Taking into consideration the selective information presented to recipients as well as their acceptance without questioning, we may be facing the danger of unification or recipient manipulation. An example of this is selective choice of books from specific areas (ie. English books) which are available in digital form through the Web. Obviously those which are available this way are more popular, or have the advantage of being accessible to a greater number of people in contrast to those which are in print only and are obtainable only in certain libraries or bookshops.

This threat, named "*The Power of tomorrow",* is connected to a Google initiative – the *Book Search*. The project's aim is to transfer 15 million English books into digital form and make them available on the Web. The books of interest include Harvard, Stanford, University of Michigan, Oxford University and New York Public Library sources. The result will be a greater interest in materials in the English language than in other one[7]. Microsoft has also

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[6] LOUISE STORY, BRAD STONE, *Facebook Retreats on Online Tracking,* The New York Times, November 30, 2007.

[7] Alan Riding, *France Detects a Cultural Threat in Google*, "The New York Times" 2005, April 11. Within the next 10 years Google is planning to spend 200 mln USD on this Project. Also francophone literature is planned to be transferred onto the Web (annual budget of 1.35 mln USD), from: EDWARD WYATT, *Googling Literature: The Debate Goes Public,* The New York Times. November 19, 2005.

expressed interest in a similar initiative, on a smaller scale, to transfer 25 million pages, or the equivalent of 100 000 books, onto the Internet[8].

A project to counter the domination of Anglo-Saxon culture is an attempt to limit the popularity of American search engines (at the same time limiting biased information unification of sources). It is a Franco-German initiative together with Bertelsmann to build a European multimedia search engine, the ***Quaero*** (search in Latin). The goal is to create a generally available tool for finding, ordering and indexing data in audio, video, text and image form. This initiative, financed through public sources, unlike Google (commercial/advertising), has a political and cultural dimension[9]. Another, similar project is the ***Theseus*** search engine, financed by German government, which extends the scope of indexed sources by new cultural areas.

Transmission

Aside from the form of information, another factor relevant to reception is the virtually unlimited transmission of data geographically and physically. This is thanks to continually improving traditional and wireless connections as well as developing specialist computer, software and other technological equipment. Computer monopoly, as an intermediary between the virtual world and users is gradually giving way to mobile technology. Wireless telephone operators with traditional services who have lost clients, as telephone connections are being taken over by free of charge Internet communication (VoIP), have taken over the space earlier taken up by traditional and then Internet media. They offer digital press, radio and TV services. Physically, they are closer to people, sometimes even in a form similar to implants, ie. wireless headphones put in the ear. Moreover, there is advanced research going on (Microsoft patent 6754472) to use human skin for data transmission, to create a personal web *(PAN – Personal Area Network),* to develop human implants, chips, which would store a great deal of data about their owners[10].

Thanks to modern technologies, there are less barriers in the flow of information, including also those stemming from the physical difficulties of using electronic equipment. The devices are becoming smaller and smaller or they can be part of clothing (computers you put on), which can be exchanged or thrown out. The transmission of information between the virtual and human world is becoming continuous in character, is cheap and increasingly useful. Man is becoming an element of a hybrid including his organism and a senses supplement - of mobile technologies in order to communicate with the digital world. This creates another challenge to information freedoms in the age of modern man.

Consequences

Adapting McLuchan's terminology, after the stage of separating media into warm and cool, we are constantly dealing with cooling of media, which effectively limit information freedoms for recipients. Modern, especially Internet media, together with virtual world resources, leave less and less need for individualism, imagination and freedom of choice[11]. The amount of available information make people use search engines which do the selection process for the people, leaving them less choice. The number of pre-selected choices or even solutions to perspective problems (earlier solved by others) is often sufficient and, in result,

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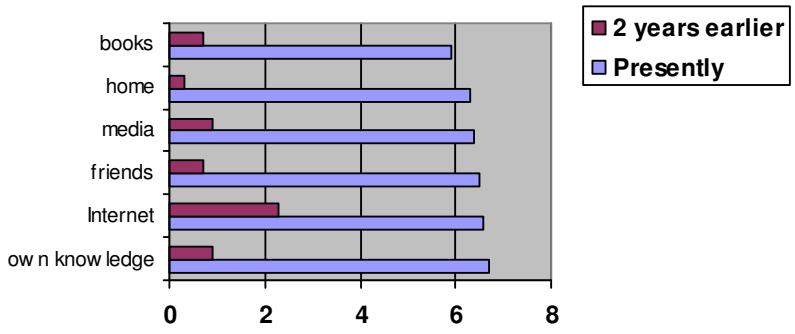
[8] Maija Palmer, *Microsoft in deal with British Library to add 100,000 books to the internet,* Financial Times, November 4, 2005.
[9] *Attack of the Eurogoogle,* The Economist, March 11th, 2006.
[10] BARNABY J. FEDER, *Remote Control for Health Care,* The New York Times, September 9, 2006.
[11] Marshall McLuhan, *Zrozumieć Media, przedłużenie człowieka,* WNT, Warszawa 2004, p. 410.

people become used to the ready available information products[12]. The "copy and paste" method is becoming all the more common. The tendency to make use of ready solutions is strengthened by the form of information offered by machines. Most of the time, it limits the intellectual effort necessary to process the data.

Consequently, widespread is becoming the phenomenon of copying good, verified but unoriginal models. This process is further amplified by developing personalisation as well as decreasing physical distance between recipient and source of information.

Chart 2. Sources of information in which people search



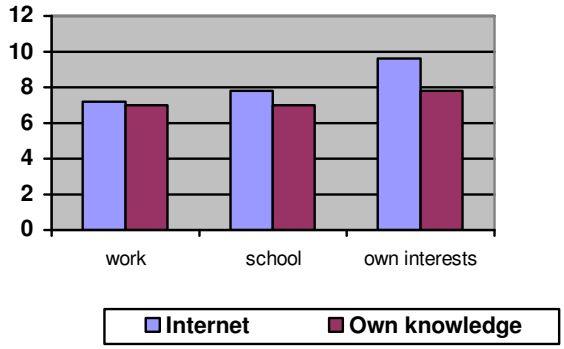
Source: author's own research

As a source of information only personal knowledge and creativity and rated as high as the Web[13]. Less valuable than the Internet are traditional media, home, friends and books. What is interesting is the growing importance of the Internet in comparison to one's own knowledge, within the last two years the Web's significance more than doubled (Chart 2).

The following results confirm the earlier stated thesis of more intensive use of ready solutions which are available through the Internet instead of one's own knowledge and creativity. The Internet has become the predominant source of information regarding people's enquiries about their surrounding world, work, school and interests.

Chart 3. Basic sources of information to people's enquiries about work, school and their interests.

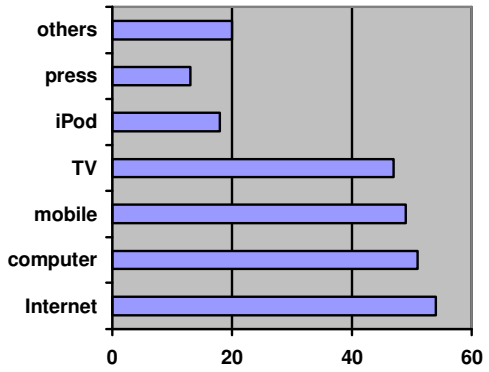
[12] An example of this are the CRM and FAQ databases which allow for automatic answering (90%) of questions about company issues.
[13] The survey was carried out in November 2007, among a group of 60 people between 23-35.



Source: author's own research

The limiting of information freedoms is coupled with growing machine autonomy – ***diginetmedia*** – the phenomenon of autonomous communication of machines/computers with each other and the in-taking of information from the real world, processing it and then sending it to other machines and people. This autonomy, so far in its early stage, begins the process of decision making by machines, which decide which information to process and transmit further. One example of such activity are the anti-spam filters which often mistakenly decide what to throw out from what is useful.

Chart 4. Media and technologies without which consumers "can't live" [%] (USA, April 2007).



Source: Internet Keeps Young People Upbeat, eMarketer, AUGUST 27, 2007.

Resulting from the new information ease, thanks to modern technologies, people who have access to them are overwhelmed by information overload. Modified, scanned and personalized information is taking up the majority of space leaving less and less room for users to make individual decisions. Paradoxically, it is now people who resist modern technology and ready available solutions who have the chance to be individualists, and thus, avoid b-exclusion. Thanks to personal searching for information and the right solutions, their originality and creativity grow.

Conclusion

It seems that the present state of affairs, manipulation of information in order to lessen the necessity for individual search for answers and, in consequence, decreasing information

freedoms (b-exclusion) lead to a new stage in IT development. In the long run, it may be surprising to everyone, including the creators, the potential of combined machines which will be more powerful than people's abilities and it will be able to connect sources of information, not in search for answers, but meeting Alan Turing's condition, going beyond the human mind to ask questions[14].

This may be going beyond the threshold, the uneasy vision of choice by humanity of virtual reality (or cyberspace) as it will be richer and more perfect than the world surrounding us. The onset of this could be the abundance of digital information sources, growing machine autonomy (diginetmedia), more advanced computer games and virtual enclaves in which people prefer to spend most of their lives as opposed to the real world. This kind of world will be perfect for all sorts of media, provided that they are virtual[15].

[14] Turing states that in order to consider a machine as having artificial intelligence, it needs to pass a test where it answers a judge's questions together with man. If a judge, based on the conversation, will not be able to tell a difference, then the machine passes the test.

[15] Włodzimierz Gogołek, Technologie informacyjne mediów, II editio with changes, Aspra, Warszawa 2006, p. 75.b