

THE EVOLUTION OF THE INFORMATION DOCUMENTARY SUPPORT IN ROMANIA - A RETROSPECTIVE STUDY

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Abstract: *Evolution of the book, better known as the disseminated information, coincides with the stages of history. That's why research and direct knowledge of the documentary sources, print and information used on the computer give us a diverse and complex form of documentary support. The fruitful achievements of bibliological research on this aspect of the information media dynamics have contributed over time to the prosperity of the cultural heritage and the unification of the people. Over time, the material support of the information storage has known a wide variety of environments: sand, clay, stone, tree bark, wood, ivory, animal bones and skins, parchment, papyrus, silk, wax tablets, paper, photographic or magnetic film, banchelite (patch board), fabric, film, magnetic, electric, optical support, etc. This is, in short, the enumeration thread of information carriers. But what is the information? It is found that even the meaning of the definition of information has undergone changes over time. It went from sound, writing, printing, to electrical signal, sound waves, etc.*

Keywords: *informations; book evolution; documentary support; bibliological research; cultural heritage*

Introduction

In the info-documentary spaces, the need for scientific research has been timidly outlined, initially crossing more historical and descriptive areas in order to boldly orient in the last years to the huge expanses and the insufficiently explored depth of the universe of information. The information society cannot be developed only by extrapolation and improvisation, and the information professions cannot remain at the level of apostolic empiricism.

Today a complete and endorsed definition of "information" is provided by STAS 8301-81-Information and documentation: *"information is a fact that is communicated, a message used to represent a fact or notion on an information medium and the meaning that it has been assigned to it, a new element in relation to the probable knowledge of the beneficiary of the information, contained in documents, description that completely characterizes an object, a phenomenon, etc. in relation to the level of knowledge attained in a certain field. The elaboration of information is the result of an intellectual and technological process that results in an information and documentation product: the document.* (Butuc, 2011: 32).

Going further, the definition of *the document* is different from one bibliographic source to another, depending on the documentary support held or the form it takes. The book circulated for a long time in the form of *manuscripts* with the value of a precious object (it belonged to rich people and was inherited by will; it was also appreciated by the one who had miniatures). There followed the first prints made of thick bark, made from old manuscripts on parchment and then the ones wrapped in incunabula sheets.

Today, the complexity of the information phenomenon exceeds all forms of complexity experienced by people throughout history. The Internet, for example, is an extraordinary human liberation experiment in a society dominated by widespread constraints. The necessary limits, such as those outlined around ideal concepts such as freedom, communication, the right to happiness, equality in the face of opportunities, etc., together with the imperative determinations related to the professional framework and to all the normative approaches of social existence make this network of networks a fabulous universe. The entry into the pragmatic rationality of the Internet must be the result of researching this phenomenon to the deepest details.

Moreover, despite appearances and behavioral facilities related to the information environment, the contemporary man rediscovers the information as a territory of a disconcerting novelty. Everything needs to be reconsidered, all implications must be addressed from other positions than yesterday. The info-documentary themes are new and revolutionary every time, because, every time, the information has different determinations, forms and completions. From the conceptual research to the research of structures, flows, combinations, professions, means used in the boundless perimeter of this universe, natural and artificial at the same time, of social and individual effects, scientific research has the most generous offer. Information specialists live in a reality that is not just a little-known territory, it is not just a newly discovered planet, but an entire system that contains the elements of a barely-intuited world.

2. The evolution of the information documentary support

People have always felt the need to create a durable inscription support, with the help of which to set and keep in writing experiences or beliefs, a means by which to overcome the inexorable passage of time.

Speaking of the age of the book, we are talking about: the incunabula of the fifteenth century and the antiquities of the sixteenth century.

In the Romanian space, the 16th century brought with it the printing of 52 printed cult books at the initiative and with the support of the reign, 14 printed books in Romanian, even though written in Slavonic characters (writing kept, otherwise, until in the nineteenth century outside the Carpathian arch). The democratization of culture led to the emergence of writings especially in Romanian. (Oane & Ochescu, 2010: 87)

For an overview of the time, we reproduce a table with the book printed in the Romanian Country:

Language	1508-1582	1601-1700	1688-1714
Romanian	14	61	39
Slavonic	35	11	-
Slavo-Romanian	3	20	22
Greek	-	17	42
Greek-Romanian	-	2	-
Latin	-	1	-
Armenian	-	1	-
Total	52	113	103

Source: Oane, Ochescu, 2010: 87

The material support of the books was *the papyrus roll* and then for a long time *the parchments* of animal skins (treated with lime and smoothed with pumice stone) *followed by those of wood in the form of waxed or simple tablets and, of course, of paper.* *The animals' skins were used for writing by the ancient Greeks, Celts and Romans. It is known that the poet Petrarca wore a leather vest and as he walked he wrote on it the lyrics that came to mind. Valuable books were written on the animals' intestines. At the library in Constantinople, established by the emperor Basilicus, a copy of Homer's Iliad was kept, written on a 37 meter long strip, worked from the snake's intestine.* (Erich, 2008: 17)

Heliade Rădulescu opens a new stage in the history of the book with progressive ideas and begins publishing periodicals. After 1861 we mention the system of *colportage* - the distribution of books and the press illegally. During the 18th century up to the first decades of the 19th century, the Romanian book knows new, secular topics: books on household and household economics, legal books (laws), didactic and pedagogical books, history and grammar books, dictionaries, calendars, literary fiction.

The period between 1895-1900 we see it as a stage of publishing socialist books and magazines by the supporters of the workers' movement. There followed a qualitative leap from the point of view of book production, specialization, typing editions: The Romanian Socialist Academy's publishing house was a mixed publishing house, but the names of the other publishers explain, by themselves, the content of the books Didactic and Pedagogical Publishing House, Universe Publishing House, Scientific and Encyclopedic Publishing House, Political Publishing House, Military Publishing House, Albatros Publishing House, Romanian Book Publishing House etc.

Looking at the classification of documents in time according to the recording technique and, respectively, of information rendering, we see the interdependence with the necessary equipment, machines and technology. Studying the book in terms of information support, this retrospective overview

is based on research and direct knowledge of the materials of the respective time period. Passing quickly through the stages of the writings until 1600 and during the period 1600-1900 we discover the manuscript book and the printed book in graphic forms with and without ornaments and illustrations but after 1918 and until now we discover an image of the research that reflects, in the 100 years of bibliology, a revolution of the pattern and the means of communication (radio, gramophone, television and telephony) next to the computer, with a fast dynamics of change and diversification of the media. We notice in this last interval that, in medieval English, the verb “inform, report” borrowed from French with the meaning “to form” has acquired the new combination - *information society*.

Entering the universe of information media for the 1900-2019 stage we can record, with a certain approximation, that they have been used most frequently in a certain time stage, until the emergence of a more efficient way of storing the increasing volume of information on documentary media.

Perforated card / cardboard paper material:

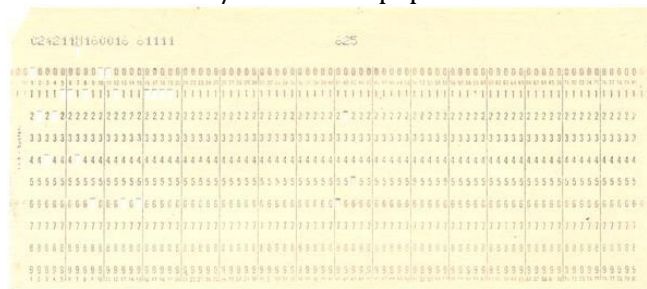


Figure no. 1. Perforated card

Standardized dimensions 18,7 cmX8,25 cm (the year 1885)

Source: Lunde, 2010: 269

The information was recorded with its help by drilling and was read using the reader through a photoelectric system since 1905. The reading was done column by column. (Negreanu, Radian, 1976: 80-82).



Figure no 2. Lecturer

Source: Lunde, 2010: 269

The slide (audio-visual medium) was used in schools as early as 1910 with dimensions of 25x100mm or 82x82mm. The image is encased in plastic, cardboard or metal frames, and since 1976 the slide is multilayered (on a frame there are 2-4 images). At first the torch, the manual projector, then the automatic one with programming (with remote control and timer) were used for reading them. (Mucica & Perovici, 1982: 75).

The film strip (visual medium consisting of a sequence of slides / black and white or color images is an idea for projection with the projector. The tape length varies from 1-2 m (10-15 images).

1928 - Using the tape recorder it was possible to read **the magnetic strip** (the steel strip was replaced with paper covered with iron oxide; plastics were also used: polyester, cellulose acetate, vinyl polychloride as a support for the ferromagnetic powder layer (granules of iron oxide mixed with a binder).

1945 - **The retro projector** was used for static projection of some visual means on a transparent support (using the halogen lamp 600-1000w). Today it is replaced by a **video projector**.

1950-**Vinyl records** appear (the first disc dates from 1890 and this format was used until 1950). The discs were read with devices called record players (phonographs) that using the needle movement on the undulations of the groove printed on the disc produce electromotor voltages that are transformed into sounds using the speaker. They were monophonic (mono) and stereo (stereo) record players with their own amplifier and speaker (independent complex) and made up only of the motor and the reading arm, which can be connected to any radio or mounted in musical combines. (Mucica, Cerghit et al. 1970: 135). Magnetic discs and tapes were stored in phonotechs. Beside these and phototechs (which kept photographs) were set up diaries (which had collections of filmstrips and slides). (Mucica, Cerghit et al. 1970: 156-157).

1955 -The first television station in Romania was created. With the help of video tubes, the light signals from which an image is made transform these signals into electrical signals and again into light signals on the TV screen. In the 19th century, monochrome (white/ black) television dominated. In 1959 chrominance signals (color) were transmitted.

1958- The first mechanical recorder with transistors was invented.

The tape recorder allowed the transmission of AF audio and VF video signals through audio cassettes.



Figure no 3. Video recorder and cassette player

Source: Mucica, Perovici, 1982: 121

1969- **The diskette** of 8" is used;

1971-**The magnetoscope** appears;

1971 -**Video cassettes** were invented;

1976-5.25" diskette is used - magnetic media, 256 KB;

1978-**The laser discs**, as usual, were made from a 30 cm glass or plastic disc.

Millions of holes were engraved on the surface read by a laser wave directed at it. A wave of light is reflected, which is then converted to a conventional analog signal. (BIBLOS 15: 11);

1979-**The compact disc CD-ROM**, 700 MB was made of PE optical media, type of multilayer memory, three-dimensional, the inventor - the Romanian Eugen Pavel. (Marinescu, 2012: 97);

1980- Laser telecommunication is experienced;

1981- **The Magnetic Video Camera** without film appears;

1983-3.5" diskette, magnetic support, 1.44 MB are used;

1994 -Information is stored on **Memory Cards**: Compact Flash, Zip drive (100 MB / 750 MB - magnetic media);

1995 -**HTML** (Hypertext Markup Language) Tim Bernera-Lee develops a language for hypertext presentation;

1998- **Memory Stick** is used;

2000 -Documentary support is enriched with 128MB / 64MB Solid State **Flash Drives**;

2004- We meet the 30GB Optic high density optical disc;

2006 -Se intrebuinteaza frecvent **DVD** High definition 30 GB optic și Discul Blu-Ray BD50GB suport optic; High Definition **DVD** 30GB optical and Blu-Ray Disc BD50GB optical media are frequently used;

2007- The 32 GB / 832 GB Solid State Drive is introduced as an efficient information document support;

2007- E-Reader is used.

Computers began to be widely used in industry and economics, and a computer could be used to execute many tasks simultaneously, by interleaving programs. Soon there was also software (instructional program system) specialized in automating the planning of these tasks. The combination of

hardware management software and task scheduler software has become known as “operating system”.

As a functionality, when these devices appeared, a tablet was mainly focused on online content, due to the relatively small storage capacities and reduced processing power. Hence the names of Internet or MID (**Mobile Internet Device** in Mobile Internet Device) tablet. With the development of processors and the improvement of technologies, tablets have come to cover a wide range of concerns, allowing activities from the most diverse.



Figure no 4: Tablet

How to obtain the electronic book involves converting the source files into PDF, LIT, HTML or EXE files. One of the most widely used e-book formats is the EXE format, which is obtained by using a compiler (Active E-Book Compiler, eBook Generator, eBook Pro, E-ditor, ProCompiler Ebook, FastEbook Compiler, Html2exe, ePublisher Pro, EbookPaper, SbookBuilder, EbookBuilder). They transform the source files into a single EXE file, set the protection-control parameters and include the reading software. The next step, before distribution, is to scan the EXE file with an antivirus, followed by its storage on a web server or offline media (diskette, CD, DVD, etc.). (Erich, 2008: 228-229)



Figure no 5: Videoconference equipment

For people with hearing or visual impairments, there are supports adapted to their needs. **The DAISY book** (Digital Audio Information System), for example, uses a digital technology that allows the automatic conversion of a digital document into “voice” to ensure reading. DAISY is based on the DTB format (Digital Talking Book). (Erich, 2008: 27).

A CD can contain up to 20 hours of good quality voice recording.

We also discover conventional **Braille or Dactyl** alphabets.

The Braille alphabet is a conventional sign system intended for the communication of the blind, consisting of six points in relief, arranged in three horizontal pairs, one above the other, corresponding to the symbol of each letter or figure in the ordinary writing; it was invented by Louis Braille, a professor at the Institute for the blind in Paris, himself a blind man. The reading format is BRF (braille), an application that allows the conversion of braille documents into digital format accessible to the blind. (Erich, 2008: 27)

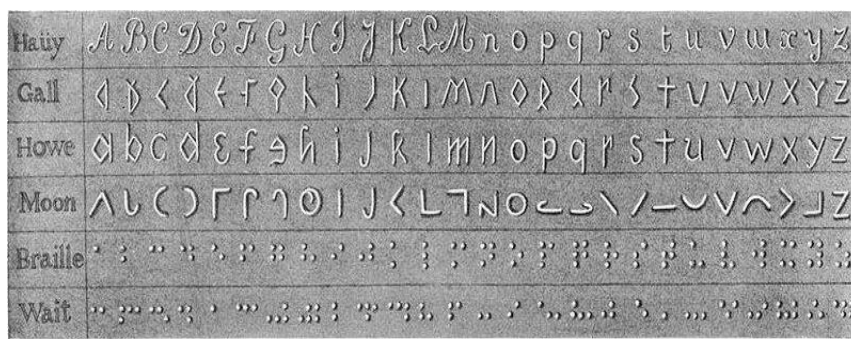
a	b	c	d	e	f	g	h	i	j
⠁	⠃	⠉	⠇	⠑	⠖	⠔	⠈	⠊	⠋
k	l	m	n	o	p	q	r	s	t
⠅	⠙	⠓	⠗	⠕	⠞	⠟	⠠	⠡	⠢
u	v	w	x	y	z	β	ü	ä	ö
⠥	⠦	⠧	⠨	⠩	⠪	⠫	⠬	⠭	⠮
1	2	3	4	5	6	7	8	9	10
⠠	⠠	⠠	⠠	⠠	⠠	⠠	⠠	⠠	⠠

Figure no 6. The Braille alphabet

Source: <http://gazetaotului.ro/2018/01/04/4-ianuarie-ziua-mondiala-braille/>

The alternative to Braille was **the Moon** type with curved characters and at angles more similar in shape to the letters of the alphabet.

For the visually impaired, 6 writing modes have been discovered over time.



SIX PRINCIPAL SYSTEMS OF EMBOSSED TYPE

Figure no 7. The alternative to Braille-Moon type

Source: <http://www.medfam.ro/louis-braille-1809-1852/>

The dactyl alphabet is a conventional system of signs is used for communication between persons deprived of hearing and the letters are shown in different positions of the fingers; there are two types of dactyl alphabet that involve either one hand or both hands.

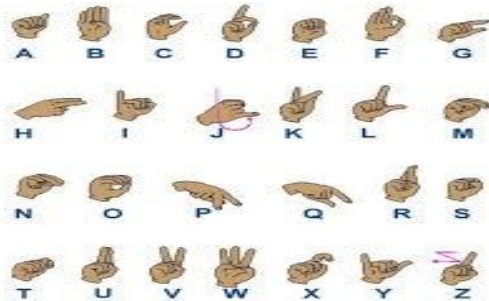


Figure no 8: The dactyl alphabet

Source: <http://www.logopedics.info/limbajul-semnelor.php>

The access technologies have come to support the blind, not only through screen readers or magnification programs, for the visually impaired, but also by revolutionizing the braille printing system. If before, to write a Braille text, the blinders used a placard and a pointer or a special typewriter, today they enjoy a much easier method: printing texts on a special printer.

As a new medium of communication of information, the Internet appears with communication technologies of the type:

1. Off-line internet

Electronic mail
Forum
Mailing list
Website
Telnet
Others

2. On-line internet

Discussion chanel
Online conference
Audioconference
Videoconference
Others

File sharing

by FTP
by Electronic mail

3. Extranet

Internet resources can be of the following type:

- **directories** (web pages organized on different topics that allow reading - writing of books. For example: Internet Public Library: <http://www.ipl.org>)
- **portals** (made up of a basic search engine and a directory. For example: online school <http://www.e-scoala.ro>)
- **databases.** Carriers of information such as bibliographies or computer files available on the computer can be accessed with or without the help of the Internet and can for example search and browse for Science Direct indexed information. For example: <http://www.sciencedirect.com>.
- **metamotors** (allow complicated keyword searches (combined searches). For example: Mamma, <http://www.mamma.com>)

With the Internet we can enter into virtual worlds with the help of VRML (Virtual Reality Modeling Language) technology. In other words, using the mouse and keyboard buttons we can act on the image as in a video game. We could, for example, visit a museum or solar system or examine a sculpture from every angle.

The storage and transmission of a huge volume of information through different methods is considered possible. Those over 22,000 TB, which is considered to have reached all the information, can be kept. Absolutely all the information that is produced can be stored with the help of complementary exomemories of high capacity. Multimedia technologies are frequently used in commercial and university websites. The intuitive footprint and added attractiveness of websites make multimedia technologies a must-have today.

Information and documentation services can no longer function only after pre-established schemes and procedures on which they base their legitimacy. They need to determine what information is considered critical, beneficial to them and implicit users. Today all types of information, documentation and communication are intertwined, and the result means more value, transformation of the raw material (the document or information) that becomes a secondary product through indexing, analysis, referential in a database, etc.

4. Documentary support of the University of Pitesti Library

Over time, libraries have been considered as the memories of humanity, their main role being to gather and preserve the entire editorial and cultural output of a nation.

The OPAC module, a component of the specialized software on TINLIB library services, existing in the library network of the University of Pitesti, allows the visualization of the entire bibliographic database of the library and of the associated circulation information (if they are operational).

Unlike traditional catalogs (systematic - domain search; alphabetical - alphabetical search by title, author, theme; weight loss), documents can be searched in a single catalog - the computerized catalog, according to any information available in the standard description of the book.

The user can also consult the bibliographic database via the Internet - WebOPAC or, in other words, OPAC on the Web - Internet access to the library catalog. The navigation is done through hypertext link - World Wide Web, in a client / server environment that allows to consult many services, including the library catalog.

Typing www.biblioteca.upit.ro/biblioteca.html or [saubiblioteca.upit.ro](http://biblioteca.upit.ro), the user will have access to the online catalog of the University of Pitesti Library.

The University of Pitesti Library has for a while held a Museum with information carriers and we reproduce here, part of them, in images reflecting, perhaps best, but succinctly, the 100 years of achievements in this segment and the evolution of the documentary support of information from technological point of view:



Figure no 9: Diskette, magnetic support Diskette of 8" 80KB



Figure no 10: Diskette of 1994, 3,5" 1,44 MB



Figure no 11: Vinyl record, plastic table holder



Figure no 12: Audio tapes: magnetic strips on plastic coplanar rolls in plastic cassettes



Figure no 13: CDs, DVDs, VCDs: Support on a polycarbonate base (aluminum or gold reflective layer, protective coatings and those that can be recorded have a laser-sensitive layer)



Figure no 14: Videotapes: VHS and VHS-C compact cassette mechanical support



Figure no 15: 245-page film support **microfiche** from a doctoral thesis



Figure no 16: School textbook with **BRaille** writing: paper support with perforations



Figure no 17: Memory stick **Figure no 18:** External USB

With the advent of the information society, the info-documentary structures have become increasingly dependent on technology, so that not only the organization and activities of these structures are different from what they were in the past, but also the range of services they provide to users.

The communication modalities have undergone major changes in the last two decades. Increased access to information, the increasing speed of obtaining information, the increased complexity of the process of analysis and retrieval of information, the progress of network technologies are just a few of the factors that have led to the change of the environment in which the library must operate.

The production of unprecedented information transforms the contemporary society into a society of information that since the advent of computers and the development of information systems has been built step by step.

Conclusions

The sphere of information carriers' coverage and forms of writing are innumerable, research is ongoing, and the sources, whether in the form of enumeration alone, are not included in the text of an article.

We did not conclude this panoramic view on the information and the sources of documentation/ information (bearers of information) without mentioning or noting all the progress made with human help. Only he was and will be the one who led and will direct the progress or regress of this important segment of life with all the implications of science, documentation, research and knowledge. Speaking of *the eras through which mankind has passed and passes*, they can be classified as: *stone, iron, agriculture, industry, technology and knowledge eras*.

We could say that the information age lies between the age of technology and that of knowledge. We are in the information age having as successive phases the information society, the knowledge society and the consciousness society and we affirm about the knowledge that it is a form of information, but also *the consciousness is information*. Knowledge is therefore understood information and acting information. Therefore, the knowledge society is only possible in relation to the information society and cannot be separated from it. At the same time, it is more than the information society through the major role of information - *knowledge in society*. The knowledge society is therefore *the Information and knowledge society*.

To know more and more quickly, people need information, power, prosperity, progress because a well-informed society is a viable, strong society, able to make good use of all the opportunities that arise. Otherwise, we cannot exist outside the information flow.

It is advisable to focus on one or two factors that are important to the beneficiaries and then develop them into a unitary set of responses. The provision of a service is akin to a theoretical performance, and if users are able to get the maximum benefit from a service, they must know how to use it, and here comes the user's education, an obligation for the information structures, a condition sine qua non, a priority marked by the fingerprint of the one providing information.

The global information context coupled with the unprecedented evolution of the media has led to a transformation of the economic life, of the social life, implicitly a cultural transformation, of mentality and not least of the daily life of each individual.

References:

1. Barabaș, D. (2010). *Sistem integrat de prezervare prin digitizare a arhivelor audio cu aplicații în producțiile radio/ Integrated system for preservation through digitization of audio archives with applications in radio broadcasting production. Teza de doctorat*. Pitești: University of Pitesti Publishing House.

2. Butuc, L. (2011). *Compendiu de biblioteconomie*. Buzău: Aldin.
3. Chihaia, L. & Chipcea E. (2003). *Suporturi pentru materialele audiovizuale*. Iași: BIBLOS 15.
4. Erich, A. (2008). *Istoria cărții de la semnele mnemotehnice la cartea electronică*. Târgoviste: Bibliotheca.
5. Lunde, P. (2010). *Secretele codurilor*. Bucharest: Enciclopedia RAO.
6. Marinescu, N. (2012). *Biblioteconomie și Știința informării, vol II*. Iași: PIM.
7. Mucica, T., Cerghit, I. & Ceacalopol, G. (1970). *Mijloace tehnice audio-vizuale în predarea istoriei*. Bucharest: Didactica si Pedagogica.
8. Mucica T. & Perovici M. (1982). *Universul mijloacelor audiovizuale*. Bucharest: Albatros.
9. Negreanu, D. & Radian, T.J. (1976). *Privire în lumea informației*. Bucharest: Albatros.
10. Oane, S. & Ochescu, M. (2010). *Istorie: manual pentru clasa a VIII-a*. Bucharest: Humanitas.
11. Radu, M. & Repanovici, A. (2004). *O istorie a tiparului și a tipăriturilor*. Brașov: Transilvania University Publishing House.
12. Tomescu, M. (1968). *Istoria cărții românești de la începuturi până la 1918*. Bucharest: Stiintifica.
13. *** <http://gazetaolului.ro/2018/01/04/4-ianuarie-ziua-mondiala-braille/>
14. *** <http://www.medfam.ro/louis-braille-1809-1852/>
15. *** <http://www.logopedics.info/limbajul-semnelor.php>
16. *** <http://www.ipl.org>
17. *** <http://www.e-scoala.ro>
18. *** <http://www.sciencedirect.com>
19. *** <http://www.mamma.com>
20. *** www.biblioteca.upit.ro/biblioteca.htmlsaubiblioteca.upit.ro