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COMMUNICATION: MEDIA CONVERGENCE FROM THE AGE OF SIGNS AND SIGNALS TO THE DIGITAL WORLD

This article attempts to characterize both the development of communication and media in the context of convergence. The media as we know it today stems from a long period of evolution: from pre-media to a “connected” society. In recent decades, we have observed a marked technological development, as a result of which theories or concepts have been created that try to capture the essence of these changes. It is worth starting these considerations by explaining the basic concept of “communication”.

Key words: communication, media, development, evolution, theories or concepts.

КОМУНІКАЦІЯ: МЕДІА КОНВЕРГЕНЦІЯ ВІД ЕПОХИ ЗНАКІВ ТА СИГНАЛІВ ДО ЦИФРОВОГО СВІТУ

У даній статті робиться спроба схарактеризувати як розвиток комунікації, так і медіа в контексті конвергенції. Медіа, якими ми їх знаємо сьогодні, виникли впродовж тривалого періоду еволюції: від суспільства без ЗМІ до «підключеного» суспільства. В останні десятиліття ми спостерігаємо значний технологічний розвиток, в результаті якого були створені теорії або концепції, які мають на меті вловити суть цих змін. Розпочати ці міркування варто з пояснення основного поняття «комунікація».

Ключові слова: комунікація, медіа, розвиток, еволюція, теорії або концепції.

To communicate means to “make common”¹. The possibility of sharing information emerged in the process of evolution. As W. Pisarek writes: [...] *richer [...], higher, more and more complex and more and more diverse species do not give up the methods typical of primitive organisms, but only supplement them with new, more perfect methods, e.g. enabling the transfer of information more precisely, faster, under various conditions and circumstances, and in various forms*². Communication in a broader sense is: [...] *all (technical, biological, psychological and social) structurally similar processes of information transfer. In a narrower sense, communication is understood only as the transfer of information (meanings) between living creatures*³. By (media) convergence we will define the mutual relations and interactions between traditional media and new media. We can also transfer this process in an analogous way to the ground of communication: to the relationship

between the stages of communication. The convergence process is a kind of cultural change that mobilizes society participants to search for new information mediated in the available media.

Without mastering communication techniques, the emergence of civilization would not be possible. The ability to communicate was a necessary factor for man to initiate technological progress and become a participant in the network society. The alphabet was a significant invention in the context of speech. It is the foundation of Western philosophy and modern science. This moment in history, which can be dated back to 700 BC, was preceded by some three thousand years of non-alphabetic communication. The “letter mind” caused a qualitative change in interpersonal communication. However, the dissemination of the literature took place many centuries later. The key moment, of course, was Gutenberg's invention of printing. These historical moments have provided the West with a kind of mental infrastructure built on the knowledge of communication⁴.

¹ W. Pisarek, *Introduction to the science of communication*, Warsaw 2008, p. 9.

² *Ibid.*, p. 10.

³ *Ibid.*, p. 18.

⁴ M. Castells, *Society of networks*, PWN, Warsaw 2008, p. 335.

The archeology of communication indicates that the ability to exchange and disseminate information has made humanoids modern homo sapiens. These abilities developed through successive eras: 1) signs and signals, 2) language, writing and alphabet, 3) printing and mass communication, 3) telecommunications and computerization⁵. The table below also shows the approximate time of the above-mentioned periods. Column – the characteristic contains a description of acquired competences or methods enabling communication.

The table above presents the stages of communication development and shows how the era of signs and signals evolved into the era of the computer and the Internet. Nowadays, however, we also use communication methods developed in the past. T. Goban -Klas draws attention to the fact that the means and tools of communication appearing in subsequent epochs do not replace the previous ones⁶. However, new means and tools are being developed to improve or complement previous forms of communication.

Walery Pisarek described the stages of development in a similar way, presenting six steps towards a universal communication community. The author distinguished: 1) the ability to use signs, 2) the formation of tribal communities, 3) the invention of writing (which has overcome time, 4) the invention of a movable type of print, 5) the development of radio and television, 6) a computer network of interactive communication⁷. Jan van Dijk presents these eras as communication revolutions⁸ and additionally distinguishes them into structural (they concern space and time) and technical ones. Examples of the first type concern the already mentioned human prehistory (e.g. sending signals by means of smoke or leaving drawings on the walls of caves) and the creation of a writing that made it possible to overcome spatial barriers. The last (current) revolution is also structural. New media can be treated and used in two ways: off – line and on-line. On the one hand, they enable communication that exceeds the time-space distance. On the other hand, they can be used without internet

access (e.g. using uploaded programs, browsing files on the disk)⁹. In the case of the technical revolution, there has been a fundamental change in the structure of connections and the transmission of content. In the mid-nineteenth century, communication was possible over long distances and, for example, using cables. New analog devices were created that are carriers of memories, e.g. photography, film, analog record. Then, in the 19th and 20th centuries, it became possible to transmit sound, text, data and images over long distances. During this period, also a telephone, radio and television were built. All the above tools needed to be put into common use. The current “communication revolution” dates back to the 1950s. It is based on technologies that have developed over almost half a century. Already after World War II, huge computers were created that were designed to process and handle simple data. Since the 1960s, computers have decreased physically while increasing their power. People operated on them symbolically, and over time, they also processed information, and thanks to being connected to the network, they began to communicate online. At the end of the 90-ties the introduction of computers for general use began. Nowadays, we can no longer imagine everyday life without computers and the Internet¹⁰.

Communication via digital media is currently being studied within Social Communication and Media Sciences. It is one of the youngest scientific disciplines in Poland and is at the meeting point of social, humanities and technical sciences¹¹. Manuel Castells distinguished three forms of communication: mass, interpersonal and individualized. In the history of media development and contemporary communication, firstly, mass communication (which can include the entire society) was examined, and only in the next stages, attention was paid to interpersonal communication, in which the designated senders and recipients are the subjects of communication. M. Castells also distinguished the third form of communication, ie individualized, which can reach the global community. However, at the same time, the message of specific content results from a personal selection¹². Today,

⁵ T. Goban -Klas, *Media and mass communication*, Polish Scientific Publishers PWN, Warsaw – Krakow 1999, Warsaw 2004, pp. 16-17.

⁶ T. Goban -Klas, *Media and mass communication*, Polish Scientific Publishers PWN, Warsaw – Krakow 1999, Warsaw 2004, pp. 16-17.

⁷ W. Pisarek, *Introduction to the science of communication*, Warsaw 2008, p. 12.

⁸ J. van Dijk, *The network Society*, London 2006, p. 13.

⁹ *Ibid.*, P. 14.

¹⁰ J. van Dijk, *The network Society ...*, p. 6.

¹¹ I. Hofman, *New Discipline Paradigms*, “Media Studies”, vol. 20, no. 4 (79), 2019, pp. 308-317.

¹² M. Castells, *The power of communication*, Polish Scientific Publishers PWN, Warsaw 2013, p. 373.

Table 1

Stages of communication development

Era:	Estimated period:	Brief characteristics:
The era of signs and signals	200 thousand years BC – 10 thousand. years. bc	Prehumans communicated by means of signals (sounds, smells, images). Appearance of petroglyphs (e.g. stacked stones), symbols carved into the ground or wood).
The age of speech and language	90-40 millennium BC	Human ancestors began to use articulated speech. This meant transcending the nature of the signal. The appearance of pictograms and ideograms (picture writing or schematic drawings).
The era of writing and the alphabet	Approx. 3500 BC	The appearance of writing and the alphabet (around 2000 BC), i.e. a closed set of symbols that are expressed by sounds. This enabled the preservation of information and its transmission. It begins with approx. 5 thousand. years ago in the Euphrates and Tigris basins.
The era of print and mass communication	15th century – 18th century	Invention of the movable type and printing (circa 1450). This enabled the development of a book, leaflet, newspaper and the start of public communication. It was an expression of the revolution of the eighteenth century.
The era of telecommunications and computerization	Twentieth century	Improving methods of collecting and processing information and sending it in the chosen form at any distance. This era was heralded by the invention of the telegraph (18th century). Other important inventions are: the telephone, photography, gramophone records and film (19th century), radio and television (first half of the 20th century)
The age of the computer	The end of the 20th century	Development of technologies and devices enabling communication as well as searching, processing, receiving and sharing data. These tools are becoming available to the public and enabling 'network connectivity'.

Source: Prepared on the basis of: T. Goban -Klas, *Media and mass communication, Polish Scientific Publishers PWN, Warsaw – Krakow 1999, Warsaw 2004, pp. 16-17.*

however, media researchers are moving away from the concept of mass communication in favor of media communication. The change of terminology is important because it also implies a change of view. Contemporary media makes it possible to process more acts of communication. In the case of media communication, a handful of selected “guards” made decisions about what content was disseminated to the audience. In contrast, media communication enables users to control, create and select content¹³. The table below shows the main differences between mass communication and media communication.

Summarizing the above table, it is worth emphasizing that the mass media are changing radically. These changes concern the number of channels, “consumption” of information and its transmission to a dispersed group of recipients. Control has shifted from broadcasters to users. The table above presents the most important

differences between the discussed types of communication. For example, mass communication is typical of television. On the other hand, websites are used for media communication. The transmission model has also changed from one-way to two-way communication, which is based on interactive exchange. Media communication can positively influence the self-realization of individuals, and hence also the ability to “connect” with other people who share a similar interest through new technologies.

Each medium that appeared in the process of civilization development was subjected to the process of massification. Along with their development, the society and the functions of the media, their use changed. D. McQuail within the social definition of media specified the types of media which he based on the historical analysis of their social development.

The above types of media together with their brief characteristics allow us to first understand

¹³ Ibid., P. 366.

Table 2

Differences between mass and media communication

	Mass communication	Media communication
Canal	Single	Plural
Audience	Unified	Diverse
Control	Sender	User
Message	One-way, time dependent	Interactive and convenient
Research paradigms	Content analysis	Search for content
The main medium of communication	Press, radio, television	websites
Motivation	Stimulation	Satisfaction simulation
Ego concept	Identification	Self-update
Social control	Law, professional ethics, society	Technical devices, monitoring
The way of learning	Social modeling	Empirical

Source : SHChaffe, MJ Metzger, *The end of Mass Communication ?*, « *Mass Communication & Society* », 4: 4, 365-379.

Table 3

Characteristics of media types

Medium	Characteristic
<u>Book</u>	The technique of reflecting fonts Stapling the page Lots of copies Commodity nature Diverse content Individual use Print freedom
<u>Newspaper</u>	Regular appearance Commodity nature Informative content Public functions City audience Relative Freedom
<u>Movie</u>	Audiovisual technique Public screenings Universal attractiveness The domination of narrative fiction International character Social control Ideological character
<u>Radio and television</u>	Massive reach, scope and audience Audiovisual message Complex technique and organization of production Public character and social regulation of action Local and global nature of messages Different types of messages
<u>Phonographic music</u>	Various recording and playback techniques Low degree of social regulation High degree of internationalization Younger audience Subversive Potential Production fragmentation Various reception situations
<u>Telematics media, internet</u>	Processor-based or computer-based technologies Hybrid nature The possibility of user interaction Both private and public functions Low level of regulation Interconnection of media

Source: D. McQuail, *Theory of mass communication*, PWN, Warsaw 2007, pp. 46, -47, 52, 54-56, 59.

the development process and the chronology of the formation of a given medium. Secondly, we can distinguish the main forms and portraits of mass media. D. McQuail adds that the above media are characterized by blurring the boundaries between them within the so-called technological convergence. Each of the above-mentioned media can be used both privately and publicly¹⁴. According to Castells, the process of “function convergence” *blurs the lines between media even in point-to-point communications such as mail, telephone, telegraph and [...] work and television*¹⁵. Single physical means (such as wires, cables, and radio waves) carry services that were previously delivered along separate paths. Nowadays, services can be provided in several ways. These phenomena are referred to as media convergence – a concept that became the focus of media scholars in the 1980s with the publication of Henry Jenkins' book. “*Convergence Culture*”. The term cited is to describe both technological and industrial, cultural and social changes. According to Jenkins: *Instead of talking about media producers and consumers who play separate roles, today we can rather see both as participants interacting with each other*¹⁶. We can understand convergence as the next phase of media development, which consists of the so-called mediamorphosis process¹⁷. Media convergence is a term that describes social changes related to the circulation of media in our culture separately. It means both the coexistence and the collision of various media systems¹⁸. There is interaction and mutual acquisition of features between individual media

between individual media¹⁹. Media convergence can also be defined as mutual relations between traditional media and new media.

Summary

The described inventions and types of media are connected by a logical clamp. Convergence is a multi-level phenomenon, both technological, media and cultural. It results from the digitization of all media content and occurs at the level of infrastructure and transformation, i.e. at the level of device and network convergence. Infrastructure convergence is about combining different functions within a single device. In the case of digital networks, there is no difference between sounds, texts and pictures because they are all transmitted digitally (via bits and bytes) as opposed to digital media²⁰. Today we use the concept of convergence both to describe the interpenetration of media and the developing mediatization of everyday life. This is also reflected in the stages of communication development. There is interaction and mutual acquisition of features between single media²¹. The effects of media convergence can be theoretical, practical or methodological. Convergence affects not only the concept of “medium”, but also the “area of activity”. Moreover, it affects social relations and the form and quality of social participation, which further influences the shaping of the media reality²². Convergence in media culture is not only a process that strengthens the transmission of content or thickens the space with multimedia carriers, it also has a non-technological dimension²³.

¹⁴ D. McQuail, *Theory of mass communication*, Scientific Publisher PWN, Warsaw 2020, p. 25.

¹⁵ M. Castells, *The power of communication*, Polish Scientific Publishers PWN, Warsaw 2013, p. 68.

¹⁶ H. Jenkins, op. Cit., P. 9.

¹⁷ The term was coined in 1990 by Roger Fiddler in relation to the transformation of communication media. According to the author, mediamorphosis is a unified way of thinking about technology and the evolution of communication media. R. Fiddler, R. *Mediamorphosis and Understanding New Media*, New York 1997, Pine Forge Press, p. 5. The researcher studied communication as a whole and noticed that media do not arise spontaneously and independently. They gradually emerge from the “metamorphosis” of the already existing ones.

¹⁸ H. Jenkins, *Culture of Convergence. A collision of old and new media*, Wydawnictwa Akademickie i Zawodowe, Warsaw 2007, p. 256.

¹⁹ R. Szczepaniak, *Media convergence – research orientations and practices*, Wydawnictwo Róża Wiatrów, Gdynia 2013, p. 7.

²⁰ H. Jenkins, *Culture of Convergence. A collision of old and new media*, Wydawnictwa Akademickie i Zawodowe, Warsaw 2007, p. 256.

²¹ R. Szczepaniak, *Media convergence – research orientations and practices*, Wydawnictwo Róża Wiatrów, Gdynia 2013, p. 7.

²² N. Negroponte, *Digital life: how to find yourself in the world of computers*, Warsaw 1997, p. 6; R. Gordon, *Convergence defined*, [in:] *Digital Journalism: Emerging Media and the Changing Horizons of Journalism*, edited by K. Kawamoto, Lanham 2003, <http://www.ojr.org/ojr/business/1068686368.php> [access date: February 21, 2016].

²³ M. Jachimowski, *Influence of media convergence on shaping in the media space*, “Annals of Press Studies, YEAR VI”, 20212, 6. pp. 37-57.

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