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TRANSFORMATION OF ELECTRONIC MEDIA

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Abstract

This paper explores some of the issues related to media convergence, with a particular emphasis on what it means for the field of communication sciences. In technological terms, media convergence involves integration and interoperability, the merging of computer networks, information and communication technologies, and digital forms of information that are mutually adaptable and accessible through "intelligent" platforms, applications, and devices. The processes that facilitate media convergence are shaped to be applied in technical, economic, and social practices, as well as cultural values, in ways that digital media are produced and used for communicating science, politics, culture, and so on. Media convergence aims to create a highly successful media environment by transitioning to digital platforms, high-speed computer networks, and fast internet connectivity.

Keywords: media, convergence, computer networks.

Introduction

Electronic technology is evolving rapidly, leading to significant changes in the concept of circuit and device technology, as well as in the economy and domains of application. Over its relatively short history, it has fundamentally transformed the components used in electronic circuits. Initially, it replaced electronic circuits based on tubes ("valves") with transistor technology, and later, it further

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developed integrated devices. This had a profound impact on conceptual solutions in the field of computer technology, leading to the integration of computer components (arithmetic-logic and control circuits becoming processors). Integrated electronic components became increasingly miniaturized. Part of this innovation is related to the miniaturization of components, as manufacturers needed to make electronic components smaller and smaller to build more capable devices. Electronic technology has become a systematic part of many devices, even on an industrial scale. In a societal sense, a new era known as the scientific-technological revolution has emerged. Many analogue signal-based devices have been replaced by digital ones, introducing the concept of digitization. Digitization is the process of encoding signals as numbers. When signals are digital, computer technology can be involved in all stages of media production, distribution, and use. The ubiquity of computing has become evident and has demonstrated various approaches that can be achieved using artificial intelligence. A modern computer can be used to create and consume all types of media. An important aspect of digitization is that it blurs the boundaries between different media that were once more distinct. Media convergence¹ can be described as the way networks and terminals are used for multiple purposes, services integrate elements of audiovisual and textual media, and media and telecommunications corporations form vertical alliances. Artificial intelligence in the field of media today is based on seven fields of artificial intelligence: machine learning, computer vision, speech recognition, natural language processing, planning, scheduling, and optimization, expert systems, and robotics. Media convergence² simply refers to the merging of different types of mass media such as traditional media, print media, electronic media, new media, and the internet, as well as portable and highly interactive technologies through digital media platforms. This results in the combination of the 3Cs, namely communication, computing, and content, as all three are integrated through technology. The most relevant example of media convergence is the smartphone, which combines different media, such as print media (e-books, news apps), broadcast media (streaming websites, radio, music apps), as well as new media (the internet) into one device that performs various functions from calling and texting to taking photos, videos, gaming,

¹ God 1999, the buzzword was convergence. Two rapidly evolving technologies, the internet and mobile phones, began to merge, and experts predicted incredible things.

² <https://leverageedu.com/blog/media-convergence/>

and much more. Media convergence¹ has become a cardinal issue in almost all academic texts, policy documents, and industry news. The concept of media convergence has had a significant impact in political and economic circles. Communicating with a media landscape undergoing significant changes has been crucial in convincing politicians, managers, investors, and other market participants that they need to adapt their strategies. What was lacking at times was a clear concept. This emerged due to the massive digitization and widespread use of the internet. Industries and organizations worldwide began transforming their methods and combined many types of media for better functionality and growth. This started when media technologies entered the digitization phase in the 1980s and beyond. CDs and digital music media replaced records and tapes in the 1980s and 1990s, and movies are increasingly produced and distributed digitally. Newspaper production became computerized, and news is distributed not only on paper but also digitally on the web. Satellite television is fully digitized in many countries, cable networks are partly digitized, and terrestrial television networks have been digitized in several countries. Furthermore, various models of digital radio are being tested. New digital media services based on platforms like the web or mobile phones have become important in many parts of the world. Media convergence is a key concept that can be defined in the context of technological, industrial, social, textual, and political terms. According to the sources², three types of media convergence are mentioned:

Convergence.

Artificial intelligence technologies can collect, process, and analyse large amounts of data. Processed data is used for prediction, thereby empowering users with relevant insights for making accurate data-driven decisions, often even before a real problem arises. The relationship between the Internet of Things³ (IoT) and artificial

¹Nicholas Negroponte was the first to coin the term convergence, stating that modern devices, in combination with technology, social media, and the internet, form the fundamental structure of media convergence.

²Ibidem op. citatum

³The Internet of Things, or IoT, is a system of interconnected computer devices, mechanical and digital machines, objects, and people that have unique identifiers (UIDs) and the ability to transmit data over a network without the need for human-to-human or human-to-computer interaction.

intelligence has been demonstrated through numerous research and product development efforts. This paper discusses the convergence of IoT-connected devices, such as linking them with machine learning models for predictive analytics. With the advent of the internet, there has been significant development in news distribution, digital marketing, document sharing, online education, digital media marketing, and music and video printing and distribution.

Technological Convergence

Technological convergence involves the combination of computing, communication, and content around networked digital media platforms. It aims to transform existing media into digital technology forms, such as reading books online (e-books, Kindle)¹, for example. A good way to assess the importance of technological convergence is by considering innovations from previous generations. Technological convergence comprises new technologies that mostly take over or build upon past technologies and perform the same task but in a more advanced manner. For instance, people used to listen to music via the radio in the past, but now, convergence has evolved, with most people using smartphones. Technological convergence is a trend or phenomenon where two or more independent technologies integrate and create a new outcome. Technological convergence generally refers to the trend or phenomenon where two or more independent technologies integrate and create a new outcome. Technological convergence is the result of disruptive innovations² that have merged previously separate areas of telecommunications, IT, and media. One example is the smartphone. The smartphone integrated several independent technologies, such as the telephone, computer, camera, music player, television (TV), and geolocation and navigation tool, into one device.

Economic Convergence

Similar to the general definition of economic convergence suggesting that countries with lower GDP will grow faster than those with higher GDP, economic media convergence allows a single company to target larger interest groups through various types of media. In economic convergence, large companies apply both old and new

¹ <https://www.google.com/search?q=E-knjige%2C+Kindle&oq=E-knjige%2C+Kindle&aqs=chrome>

² The disruptive theory emerged in a production model that assumed the physical form of products and distribution through the traditional sales chain.

media to their advantage by selling goods or rights to products. This is the horizontal integration of the entertainment industry, where companies like Sony, AOL, Time Warner now have interests in film, TV, books, games, the internet, music, real estate, etc.

Cultural Convergence

Cultural convergence of media represents the connection between two or more cultures when they adopt characteristics from one another and become more similar. The increasing similarities among cultures are not limited to consumer brands and media. Some of the major forms of cultural media convergence include the following: When the weaker of two cultures adopts traits from the dominant culture. When the original features of the weaker culture are completely erased and replaced by traces of the dominant culture, e.g., contemporary immigrants no longer speak their native language. The essence of media convergence lies in the merging of communication technology and computer networks, leading to the instant transformation of many traditional service industries and work practices while creating new forms of content. Media convergence has promoted diversity and inclusion in the real world. Globalization has played a central role in universalizing today's reality through media, as the world seeks to become more inclusive for all, regardless of different cultures, religions, genders, etc. Thus, media convergence¹ has led to the universalization of popular culture. Media convergence has been realized in various computer devices that people use in their daily lives. Smartphones, tablets, and other smart devices offer a multitude of services that were previously available only through various disconnected technologies. Today, there is still debate about how these different types of convergence affect people at the individual and societal levels. Some authors believe that convergence and new media technologies make people smarter by requiring them to make decisions and interact with the media they consume. On the contrary, others argue that the digital age provides access to more information but leaves consumers

¹Media convergence means the interconnection of communication technologies, computer networks, media content, and information. It consists of the 3Cs, which are computing, communication, and content, and it results in digital media content and the beginning of the internet.

intellectually indifferent¹. Communication companies have formed newspaper chains and networks of radio and TV stations to reap many of these benefits. Corporate convergence can result in treating the audience as consumers. Furthermore, rapid technological changes have disrupted audience activities. People lack the skills to fully leverage the advantages of new media. It is expected that an audience so accustomed to traditional forms of media will embrace new ways of receiving information. Additionally, media companies seek audiences with higher profits through cross-selling in production and advertising.

Current State of Achieved Convergence

The areas of effective AI application in print media, cinema, radio, television, and advertising are wide-ranging: automation of business processes and customer relations, monitoring and listening to social media, fact-checking, predictive success analysis, video creation and post-production, voice and conversation assistants, automated composition, personalization, recommendations, have enabled content dissemination optimization, emotion tracking, and accessibility. With the expansion of digital media, it was only a matter of time before media merged into a single medium. Technology is the primary driver of media convergence. Needless to say, when talking about media convergence in the modern age, we are referring to digital media. The use of artificial intelligence, commonly referred to as AI, is growing at an unprecedented pace. Artificial intelligence and the Internet of Things (IoT) can perform various tasks in the field of media. Artificial intelligence is responsible for managing and making efficient decisions with few errors or mistakes, while IoT is responsible for handling data and various other connected things. Today's convergence is at the level of artificial intelligence (AI)² with the Internet of Things (IoT)³, which promises something similar to the convergence of the Internet and the mobile phone in 1999. No technology has reached its full potential individually; each could provide more than expected. Together, however, their impact will be enormous—far more comprehensive than previously imagined.

¹ Jenkins, Henry. *The Cultural Logic of Media Convergence Technology Review*, 2004.

²Artificial intelligence is the cornerstone of innovation in modern computing, delivering value for individuals and businesses. Artificial intelligence simulates human intelligence processes by machines, especially computer systems.

³IoT (Internet of Things)

Artificial intelligence is simply understood as a process or technique that intelligently studies and perceives its environment and takes the necessary steps and actions to realize opportunities for success based on a predetermined goal. With some advanced discussions on artificial intelligence in ICT, it is about the evolution of artificial intelligence and the methods and techniques associated with the Internet of Things. The use of artificial intelligence requires data capability and knowledge, adding additional complexity to an already complex environment. The convergence of digital media is a continuous evolutionary process driven by innovation in technology.

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