Evolving information landscape: ICT's influence on societal digitalisation

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Abstract The establishment of a human-centered, open, and development-oriented information society is a prevailing objective for a significant number of nations worldwide. A key priority among the majority of countries is the construction of an information society that facilitates the creation, collection, access, utilization, and exchange of information and knowledge. The process of society’s digitalization plays a vital role in enabling individuals to realize their maximum capabilities, actively contribute to both social and personal development, and ultimately enhance their overall quality of life. The primary objective of this article is to characterize the current intricacies surrounding the development of the information sphere. Furthermore, it seeks to elucidate the theoretical and practical aspects regarding the influence of specific information and communication technologies on the pervasive trend of digitalization within social processes on a global scale. The study employed analytical and bibliographic methods to examine the scientific literature on the development of information and communication technologies (ICTs). Additionally, comparative, logical, and linguistic methods were utilized to facilitate analysis. Methodological approaches such as abstraction, idealization, deduction, induction, synthesis, information analysis, and systemic and structural methods were employed to study and process data. Furthermore, the authors conducted an online questionnaire survey as a practical means to address significant aspects concerning the development of the information sphere. The study successfully identified the primary theoretical aspects of the digitalization of social processes, focusing on the key issues at hand. Additionally, an examination was conducted to analyze the dynamics of scholars’ perspectives concerning crucial aspects of this subject matter.

Keywords: digitalization, information society, information and communication technologies, information space, digital infrastructure, informatization

1. Introduction

The globalization of world economic relations, coupled with the elimination of information borders between states, has led to the rapid advancement of the information society in both developed and developing nations. This phenomenon can be attributed to the extensive integration of cutting-edge scientific and technological advancements in the field of information and communication technologies.

The theoretical segment of this study comprehensively investigates the concept, significance, and fundamental components associated with the process of society’s digitalization.

The practical aspect of the research encompasses an evaluation of key indicators prioritizing the development of digitalization. Additionally, it encompasses an examination of distinctive attributes that illustrate a nation’s transition from a post-industrial society to an information society. Moreover, this study examines the factors influencing the impact of information and communication technologies (ICT) on the formation of society's digitalization, along with identifying emerging trends in the development of the information sphere concerning the implementation of ICT in the forthcoming years (Nazar et al., 2022).

Drawing upon the findings of the study, pertinent conclusions were derived regarding the addressed issues. Notably, the respondents evaluated the advancement of information and communication technologies as the foremost indicator of society's digitalization. Concurrently, notable trends in the evolution of the information sphere, about the forthcoming years' implementation of ICT, encompass the growth of information products and services, as well as the utilization of information...
technology capabilities to foster novel forms of entrepreneurship, education, science, and the social sphere (Podolchak et al., 2021).

The objective of this study is to ascertain the perspectives of researchers in the field of societal informatization regarding the specificities of the influence of ICT on the digitalization of social processes.

2. Literature review

Contemporary awareness among the world’s leading nations emphasizes the crucial significance of effective utilization of information for fostering progressive social development (Dutchak et al., 2020; Iryshcheva, 2021).

In the current era of dynamic global information infrastructure advancement, ICTs assume a pivotal role in driving the socioeconomic and business landscape of any country. Consequently, they exert a favorable influence on the expeditious growth of trade, finance, and transportation sectors, thereby facilitating robust cooperation (Mesa, 2023; Cerase, 2018).

The integration of recent advancements in ICT within the business environment has notably enhanced employee productivity. This is primarily attributed to augmented mobility and remote accessibility to productive systems, streamlined internal and external communication processes, and the introduction of opportunities for automating business operations, including the implementation of electronic document management systems. Furthermore, the emergence of new markets for remote services in sectors such as healthcare, education, and security, along with the proliferation of applications and high-tech electronic devices, signifies the transformative impact of ICT. Moreover, the rapid access to high-speed internet has prompted the emergence of novel business-to-customer interaction models, further augmenting the capabilities, dynamism, and efficiency of the business environment (Androniceanu, Georgescu & Sabie, 2022; Fang, 2022; Popov et al., 2021).

The development of ICTs has prominently contributed to the emergence of a burgeoning sector in trade known as e-commerce. This segment is rapidly evolving and has facilitated the establishment of advanced online trading platforms, simplifying counterpart search and enabling swift interaction among traders. Market expansion is observed, accompanied by the introduction of novel products and services catering to diverse consumer groups, consequently accelerating the pace and volume of trade (Losito, 2021; Lovari, 2020; Zayed et al., 2022).

Moreover, the role of ICTs in the contemporary landscape holds significant importance in the financialization of countries. Instantaneous money transfers between global banks, extensive telecommunication systems facilitating state-level settlements (e.g., SWIFT and TARGET systems), money flow monitoring, electronic payments, the functioning of stock exchanges and banking institutions, as well as diverse funds, rely heavily on the relevant information and communication infrastructure (Masucci, 2019), (Rodríguez-Hevia, Rodríguez-Fernández & Ruiz-Gómez, 2022; Iatsyshyn et al., 2020).

The remarkable achievements of modern scientific and technological progress have resulted in the increasing significance of ICTs in shaping its ongoing development. These technologies are being progressively integrated into scientific endeavors as essential technical components, enabling deeper and more comprehensive analyses of contemporary phenomena and processes. ICTs play a pivotal role in opening up new avenues in science and technology, fostering an organic synergy between traditional bastions of scientific knowledge. They facilitate unrestricted access to information, thereby facilitating comprehension. Additionally, ICTs enable rapid transmission, processing, and updating of vast quantities of data across different regions of the world, thereby contributing to the creation of new goods and services essential for daily life. Consequently, these trends not only foster technological advancement but also confer economic (and hence, political) power upon the innovating state (Kan et al., 2022; Adriaens & Ajami, 2021).

In the current landscape of intense global competition, a country that specializes in the production and trade of high-tech products garners increased investment due to the significantly elevated value added to the final price of such products (Banga, 2022; Timchuk & Evloeva, 2020).

Undoubtedly, the efficacy of modern ICTs hinges upon the quality of a nation’s human capital, serving as the foundation for the establishment of an "information society." A prevailing trend in ICT integration is the availability of contemporary educational programs through open access to the global Internet. This inclusive approach enables individuals from diverse income segments to engage in educational processes, acquire new knowledge, skills, and competencies, and enhance their professional acumen with maximum benefits for their personal and vocational lives while incurring minimal costs (Elia et al., 2021).

ICTs serve as significant catalysts for expediting the socioeconomic progress of nations. On one hand, ICTs possess the capacity to rapidly bridge the economic divide with global frontrunners, generating substantial profits and creating additional wealth and employment opportunities for highly skilled individuals. On the other hand, several countries view the development and utilization of ICTs within their economies and societies as pivotal components of their national strategies aimed at enhancing living standards, fostering knowledge acquisition, and fortifying international competitiveness (Zhang et al., 2022; Hubanova et al., 2021).

Notwithstanding the indisputable advantages offered by ICTs, notable challenges hinder their effective utilization in both developed and developing nations. Addressing these obstacles is imperative to unlock the complete potential of informatization. Several of these barriers are deeply rooted and enduring, such as the generation gap in ICT learning and experience, making them inherently arduous to overcome. Developing countries encounter issues of underdeveloped...
telecommunications infrastructure, inadequate computer literacy, and limited awareness regarding the Internet (Ferracane & Marel, 2019; Bordiuk et al., 2023).

Given the persisting "digital lag," developing countries face a heightened risk of falling behind in capitalizing on the potential income generation associated with the creation of high-value-added products. This situation jeopardizes their opportunities for accelerated socio-economic growth and presence in the digital realm (Ferencz & Gonzales, 2019).

Notably, authoritative experts emphasize that the digital divide between technologically advanced nations and those not aligned with the prevailing global economic order is expanding at a faster pace than the existing gap in economic development between developed and least developed countries.

3. Materials and methods

A pragmatic investigation into contemporary trends in the advancement of the informational aspect of society and the influence of ICT development on the comprehensive digitalization of the public sphere was undertaken via an online survey administered to 214 scholars residing in the Vinnytsia, Sumy, Zhytomyr, Poltava, Odesa, and Kyiv regions of Ukraine. The study, conducted between 2022 and 2023, employed the Google Forms service as the survey tool.

4. Results

A critical facet of the research topic entails the identification of paramount indicators on the development of digitalization, serving as criteria for assessing the efficacy of information support (Figure 1).

![Figure 1](https://www.malque.pub/ojs/index.php/msj)  

**Figure 1** Major indicators of digitalization development, %. Source: compiled by the authors.

As depicted in Figure 1, participants consistently recognized advancements in the development of information and communication technologies as the foremost indicator among those examined, both during the initial and subsequent years of the survey.

Throughout the survey, respondents discerned the following salient features that epitomize a nation's transition from a post-industrial society to an information society (Figure 2):

- Based on the survey findings, indicators of the transition towards an information society encompass the widespread availability of the Internet and the consequent shifts in employment dynamics. Moreover, this transition entails the establishment, development, and transformation of contemporary social relationships, leading to the emergence of novel social configurations, groups, and interactions.

Furthermore, through the analysis of survey responses, the study successfully identified the key factors influencing the digitalization of society as a result of ICT integration, as indicated by the survey participants (Figure 3):
Figure 2 Features that characterize the country’s transition from a post-industrial to an information society, %. Source: compiled by the authors.

Figure 3 Major factors of ICT influence on the formation of society's digitalization, %. Source: compiled by the authors based on Annex 2.

- The establishment of a unified information and communication infrastructure within the state, seamlessly integrated into the global information space.
- Prioritizing the advancement and dissemination of information and telecommunication technologies across diverse sectors of the economy and society.
The survey outcomes unveiled the principal trends anticipated in the progression of the information sector concerning the implementation of ICT in the forthcoming years (Figure 4).

Based on the survey findings, the most prominent trends projected for the advancement of the information sector in the upcoming years, regarding the implementation of ICT, encompass the evolution of information products and services. Additionally, the utilization of the potential offered by information technology is expected to fuel the emergence of innovative forms of entrepreneurship, education, science, and the social sphere.

5. Discussion

The incorporation of theoretical foundations from management science and practical insights from managerial professionals enables an evaluation of the advantages and potentialities offered by contemporary information and communication technologies. Leveraging the latest advancements in informatization and digitalization, alongside mobile and satellite data transmission systems, as well as modern social paradigms and networking approaches, provides additional prospects for enhancing governance processes within the state and society. These opportunities effectively amplify the efficiency of these processes (Qian, Liu & Pan, 2022; Ding, Zhang & Tang, 2021).

Presently, the global phenomenon of transitioning from an industrial society to a post-industrial one is gaining momentum, propelled by active globalization, the expansion of the service sector, and the growth of intangible production fostered by scientific and technological advancements. This transformation is primarily attributed to the pervasive and dynamic integration of information and communication technologies across various aspects of individuals’ lives, societal dynamics, and business entities, as well as intergovernmental and interstate collaborations (Goldfarb & Tucker, 2019; Lin, 2019).

ICTs have emerged as the principal catalyst for economic progress in the contemporary global landscape. The advancement of ICTs has led to significant growth and advancement across nearly all sectors of the economy. It has facilitated the simplification and acceleration of production and business processes while enabling the swift accumulation and processing of vast amounts of information. Consequently, this dynamic environment stimulates the creation and expansion of new industries in the realms of business, science, and technology. Notably, ICTs have streamlined users’ access to cutting-edge databases, empowering them to acquire fresh knowledge and skills, consequently enhancing their professional aptitude (Ercan & Samet, 2018).

The utilization of ICTs expedites the decision-making process across various domains of public life. It enhances the quality of these decisions and amplifies their implementation efficiency. Consequently, this transformation reshapes the mechanisms of public administration, prompting a reorientation and gradual reformation of the fundamental principles governing citizen participation in public governance processes. The shift from an industrialized approach to public process management towards the advancement of the information society motivates nations and governmental entities to embrace and expand the adoption

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Figure 4 Tendencies in the development of the information sector in terms of ICT implementation in the forthcoming years, %.

Source: compiled by the authors.

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of the "e-government" concept. This entails the organization of public authorities through local information networks and segments of the global information network, alongside relevant software applications. Together, these components ensure the seamless functioning of authorities and facilitate effortless and accessible daily communication for citizens, legal entities, government agencies, and public organizations (Chen, Gozgor & Koo, 2021; Ding, Zhang & Tang, 2021).

6. Conclusions

The examination of relevant scientific literature and the findings derived from the questionnaire survey has revealed that the transition towards an information society entails the imperative of transforming the public administration system. This transformation necessitates a comprehensive reevaluation of existing traditions and the establishment of a novel state model. Such a paradigm shift is highly pertinent in light of the challenges posed by the information society.

The incorporation of information technologies in public administration has emerged as a prominent global trend. In the contemporary landscape, digitalization has become an integral component of public policy, facilitating the efficient organization of activities across diverse sectors of the economy and the regulation of various domains within social and political realms. To this end, the adoption of advanced information methodologies, the utilization of high-quality software, and the cultivation of user competencies enable the progression of society toward e-democracy. This advancement enhances the efficacy of public administration, fosters economic growth, and elevates the overall quality of life.

Ethical considerations

We confirm that we have obtained all consent required by the applicable law to publish any personal details of the research subjects. We agree to provide the Multidisciplinary Science Journal with copies of the consent or evidence that such consent has been obtained if requested.

Conflict of Interest

The authors declare no conflicts of interest.

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