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THE PHILOSOPHICAL FOUNDATIONS OF THE INFORMATIZATION PROCESS

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Abstract
The article examines the philosophical foundations of the informatization process as a key factor in 21st-century civilization. Drawing on historical and contemporary philosophical traditions, it analyzes the ontological and communicative interpretations of information, from ancient philosophy to modern thinkers such as Wiener, Shannon, Floridi, Habermas, Luhmann, Bell, and Toffler. The study highlights the transition from technical to socio-philosophical understanding of information and emphasizes the transformative impact of informatization on society, while offering critical remarks on optimistic assumptions and real-world challenges such as manipulation and information colonialism. The analysis reveals that informatization functions as a mechanism for societal self-renewal, akin to a circulatory system, with significant implications for social structure, consciousness, and global development.

Keywords: Informatization, civilization, philosophical, interpretations, communication, cognition, empiricism, institutions.

Introduction

The sharply increasing social significance of information as the main factor of 21st-century civilization naturally gives rise to the necessity of reconsidering the philosophical content of this phenomenon. Today, the concept of information is being studied not merely as an element of technical or communicative processes, but as a fundamental category that defines the ontological basis of society. Therefore, the content, essence, formation mechanism, and impact of information on the development of society are interpreted differently by various philosophical schools.

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This article aims to explore the philosophical foundations of the informatization process. It addresses the following key questions: How has the concept of information evolved across philosophical traditions? What are the main ontological and communicative approaches in contemporary philosophy? How do leading thinkers interpret the socio-philosophical essence and consequences of informatization? The relevance of the study stems from the profound systemic changes that informatization brings to social structures, interpersonal relations, individual consciousness, and cultural identity. Understanding these foundations is essential for analyzing both the opportunities and risks of the information society.

Methods

This study employs a theoretical and philosophical-historical method. It is based on a critical-comparative analysis of primary philosophical texts and key works by classical and modern thinkers. Sources include ancient Greek philosophy (Plato and Aristotle), Eastern philosophical traditions (al-Farabi, al-Biruni, and Ibn Sina), and 20th–21st century works in cybernetics, information theory, and social philosophy (Norbert Wiener, Claude Shannon, Luciano Floridi, Jürgen Habermas, Niklas Luhmann, Daniel Bell, and Alvin Toffler).

The analysis proceeds in chronological and thematic order: first, early interpretations of information; second, Eastern contributions to the theory of knowledge; third, the formation of modern information concepts in cybernetics and mathematical theory; and finally, contemporary ontological and communicative approaches along with their socio-philosophical implications. Critical reflection by the author is incorporated where relevant to evaluate the applicability and limitations of the theories in the context of real information society practices, including issues of fake information, manipulation, and power imbalances. References are drawn from both original editions and standard translations.

Results

The analysis reveals several core findings regarding the philosophical foundations of informatization.

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The earliest interpretations of information can be found in ancient philosophy. In his dialogue "Timaeus," Plato emphasizes that the orderliness of existence and the purposeful orientation of the cosmos derive from its foundation in "logos." Logos, in turn, is interpreted in meaning as "information" or "ordering knowledge." Thus, for Plato, information serves as the highest principle of order that shapes existence.[1] Aristotle, on the other hand, explains the transmission and reception of information through the category of "form." According to him, every thing consists of the unity of matter and form, and form is the "information code" that carries the essence. Therefore, in Aristotle's metaphysics, information is interpreted as the program for the formation of matter.[2]

These views help in understanding the ontological roots of modern information theory. As the author, it is worth noting that although the ancient thinkers' interpretations of logos and form are not directly related to modern informatics or communication theory, they lay the foundation for understanding information as a structural element of existence.

Eastern interpretations of information are also distinctive and are mainly related to the process of cognition and the foundations of cosmic order. While studying the mechanism of the emergence of knowledge, Abu Nasr al-Farabi emphasizes that human thinking achieves cognition by abstracting information coming from the external world. According to him, any cognition is a process of processing information and giving it a logical form.[3] Abu Rayhan al-Biruni, in turn, stresses that the scientific value of information gains strength only when it is confirmed by empirical verification. In his work "India," he speaks about the necessity of the correspondence of information to truth and its proof by facts.[4] Here, as the author's critical reflection, it can be said that al-Biruni's emphasis on empiricism is becoming increasingly relevant today in the era of "fake information." While explaining the psychological and logical mechanisms of cognition, Abu Ali ibn Sina dwells in detail on the role of sensation, thinking, and intuition in the formation of information. According to him, information is a dynamic form of the mental process that connects a person with reality.[5]

In the scientific thought of the 20th century, the concept of information acquired a sharply new meaning. The cybernetics concept developed by Norbert Wiener

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interpreted information as the central element of the management process. Wiener emphasized that "cybernetics is the science of control and information transmission processes" and explains all social relations in society through information flows. In addition, Claude Shannon's information theory shaped information as a category with mathematical measurement. According to Shannon's theory, the amount of information is related to probability, uncertainty, and transmission channels, and any communication is the difference between signal and noise. Although Shannon's model is technical in nature, as the author it should be emphasized that this model also serves as an important conceptual basis when applied to social processes. Because the information system of society is also open to the influence of noise, incorrect information, and manipulative information. This is clearly demonstrated by the development of the concept of information security.

In the philosophy of the 20th–21st centuries, two main approaches to information have been formed: 1. The approach that considers the ontological status of information as the basic element of existence (L. Floridi, M. Badiou); 2. The approach that considers the communicative essence of information as primary (Habermas, Luhmann). For example, Luciano Floridi interprets information as the "fundamental state of existence" and introduces the term "infosphere." According to him, modern man lives entirely in an information environment.[6] Supporting this view, it can be said that in today's digital society, not only society but even the individual himself has begun to manifest as an "information system." J. Habermas, on the other hand, sees information as the main component of social communication. In his "Theory of Communicative Action," the concept of information is analyzed as the basis of mutual understanding, comprehension, agreement, and dialogue between people.[7] N. Luhmann calls information a "selective code" that enables the system's self-perception. From Luhmann's point of view, information is not just data, but a process of the system's reorganization of its own state.[8] As the author's critical opinion, it can be said that Habermas's concept of "communicative rationality" has a highly idealistic character and does not fully work in the conditions of a real information society where manipulative communication, information

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attacks, fakes, and bot systems dominate. However, this does not diminish the importance of this theory in understanding social consciousness.

The process of informatization has become one of the most important and decisive factors of modern society. From a socio-philosophical point of view, this process represents complex systemic changes that affect the structure of society, social relations, the formation of individual consciousness, and cultural identification. Informatization is not merely the technical modernization of society, but a social transformation that brings it to a qualitatively new stage. Therefore, this process requires philosophical analysis.

Starting from the second half of the 20th century, the rapid development of information communications shaped a new model of civilization. The American sociologist and philosopher Daniel Bell called this process "post-industrial society." According to D. Bell, knowledge and information, rather than capital or labor, begin to acquire paramount importance as the central factor of production. With this, the socio-economic structure of society changes radically: the service sector expands, intellectual labor gains dominance, and scientific-research activity becomes the main resource. Supporting this point of view, it can be said that similar trends are also observed today in Uzbekistan and other CIS countries. In particular, in Uzbekistan's "Digital Economy – 2030" concept, the transition to a knowledge-based economy is recognized as a priority direction of state policy.

One of the thinkers who provided the deepest socio-philosophical analysis of the essence of the informatization process is Alvin Toffler. In his work "The Third Wave," he divides human civilization into three stages: the agrarian wave, the industrial wave, and the information wave. According to him, the third wave is a society based on knowledge, technology, and information, in which: the concepts of time and space are shortened; economic processes become networked; traditional professions disappear or change their content; the communicative capabilities of the individual expand; and political institutions become more open.[9] A. Toffler's views show from a socio-philosophical perspective that the informatization process not only modernizes society but also radically reorganizes it. As the author, it is fair to say that although A. Toffler's

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concept generalizes global trends, some of its optimistic views (such as the creation of equal opportunities for everyone through informatization) are not fully confirmed in real practice.

One of the philosophical interpretations of the informatization process finds its expression in Jürgen Habermas's theory of communicative action. J. Habermas understands the development of society on the basis of communicative rationality. According to him, for society to be complete, people must reach agreement through mutual dialogue.[10] The informatization process is interpreted as a positive phenomenon in J. Habermas's theory. Because modern communication technologies — the Internet, mobile communication, and social networks — strengthen dialogue between people, ensure openness, and serve the democratization of society.

However, as the author, a critical approach emphasizes that in practice, information technologies do not always democratize society. On the contrary, they can intensify manipulative information flows, exert pressure on mass consciousness, and even create "information colonialism." Niklas Luhmann carried out a deep socio-philosophical analysis of the informatization process. N. Luhmann interprets society not as a set of individuals, but as a system of communications. According to N. Luhmann's theory: society lives through "information flows"; each system has its own internal code; communication is the system's self-reorganization; information is a process of selection and choice.

Thus, the informatization process is a mechanism that enables a complex system such as society to renew and reproduce itself. In other words, information is the "circulatory system" of society. Supporting N. Luhmann's concept, it can be said that in modern societies, the interruption of information flows has become a natural state that leads to economic, political, and social crises.

Discussion

The findings demonstrate that the philosophical foundations of informatization are deeply rooted in both ontological and communicative traditions, evolving from ancient principles of order and knowledge to modern systemic and

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dialogical understandings. These interpretations help explain informatization not merely as technical modernization but as a qualitative social transformation that restructures society, individual consciousness, and cultural identity.

Supporting Bell and Toffler, informatization indeed shifts societal priorities toward knowledge-based economies, a trend observable in Uzbekistan and other CIS countries through initiatives such as the "Digital Economy – 2030" concept. Toffler's wave theory effectively captures the radical reorganization of social life, though some optimistic elements — such as equal opportunities for all — are not fully realized in practice.

Habermas's communicative rationality offers an idealistic framework in which information technologies (internet, social networks) enhance dialogue, openness, and democratization. However, as critically noted, real-world conditions often feature manipulative information flows, information attacks, fakes, and bot systems, limiting the theory's practical applicability. Similarly, while Floridi's infosphere concept accurately describes the immersive information environment of digital society, and Luhmann's view of society as communication systems explains self-renewal through information flows, interruptions in these flows frequently lead to economic, political, and social crises.

Luhmann's idea that information acts as the "circulatory system" of society is particularly insightful: informatization enables complex societal systems to continuously renew and reproduce themselves through selection and reorganization. Yet, this mechanism also creates vulnerabilities, including the risk of "information colonialism."

Overall, the philosophical analysis underscores the dual nature of informatization — as both an empowering force for openness and progress and a potential tool for control and inequality. Future research could further examine how these philosophical foundations manifest in specific national contexts, such as Uzbekistan's digital transformation, and explore strategies to mitigate negative effects while maximizing democratic and developmental benefits.

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