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МАТЕРІАЛИ

VI МІЖНАРОДНОЇ НАУКОВО-ПРАКТИЧНОЇ КОНФЕРЕНЦІЇ

«УПРАВЛІННЯ ТА АДМІНІСТРУВАННЯ В УМОВАХ ПРОТИДІЇ ГІБРИДНИМ ЗАГРОЗАМ НАЦІОНАЛЬНІЙ БЕЗПЕЦІ»

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INFORMATION AND COMMUNICATION INDICES AS A TOOL FOR MEASURING THE GLOBAL DIGITALIZATION OF THE ECONOMY

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Global digitalization processes define and significantly influence the current dynamics of economic development. Information and communication technologies (ICTs) are becoming a key factor in the competitiveness of nations and form the foundation of the emerging knowledge-based economy. Digital platforms, artificial intelligence, data analytics, and business process automation are radically transforming the structure of international markets, creating new models of interaction between governments, businesses, and consumers. In this context, the issue of measuring the level of digitalization – both at the national and global levels – acquires particular relevance. Information and communication indices developed by leading international organizations play an essential role in this regard. They enable the assessment of countries' readiness for digital transformation, the identification of strengths and weaknesses in national digital strategies, and the comparison of the level of ICT development within a global context.

The necessity of an objective assessment of the level of digital development necessitates increased attention from scholars to the theoretical understanding of the digital economy as a multidimensional phenomenon. Accordingly, contemporary scientific literature is increasingly examining the economic, managerial, and social aspects of digital transformations. Research on the digital economy has become an interdisciplinary field that encompasses aspects of macroeconomics, computer science, management, and sociology. Scholars [1–3] emphasize that digitalization is not merely a technological phenomenon but also a socio-economic transformation that changes the nature of production, consumption, and global competition.

In this regard, a need arises for a systematic assessment of the digital maturity of economies. For this purpose, comprehensive digital development indices are utilized, which enable not only the quantitative measurement of digitalization levels but also the comparison of countries in terms of their readiness for digital transformation.

Among these indices, the most authoritative are the following: the ICT Development Index, the World Digital Competitiveness Ranking, and the Global Competitiveness Index.

The ICT Development Index (IDI) was developed by the International Telecommunication Union (ITU). The index combines three dimensions: access to ICT, use of ICT, and ICT skills. It is based on objective statistical indicators that characterize the development of telecommunication infrastructure, the level of Internet and mobile network penetration, and education in the field of ICT. A detailed methodology is presented in the ITU's Measuring the Information Society Report [4].

The World Digital Competitiveness Ranking (WDCR), developed by the International Institute for Management Development (IMD), assesses a country's ability to develop, implement, and effectively utilize digital technologies. Methodologically, the index is based on three subsystems: Knowledge, Technology, and Future Readiness [5].

Global Competitiveness Index (GCI), created by the World Economic Forum (WEF), has a broader economic foundation. Its structure comprises twelve components, including the institutional environment, infrastructure, ICT adoption, innovation capability, and workforce skills [6].

It is worth noting that although these indices are all designed to measure digital potential, the approaches to their construction differ significantly. The ITU focuses on infrastructural and educational aspects, while the IMD emphasizes the economic efficiency of technology use. The WEF combines an institutional and economic approach with elements of innovation assessment.

Summarizing the results of existing research, several conceptual conclusions can be drawn.

First, information and communication indices serve not only as instruments of statistical accounting but also as analytical mechanisms of global governance in the digital economy. They provide a basis for international comparisons and influence public policy in the sphere of digital transformation. For instance, the IDI indicators are often used by the governments of ITU member states to identify strategic priorities for ICT development.

Second, the indices enable the identification of structural imbalances in digital development. Countries with a high level of innovation potential exhibit stable growth in digital competitiveness, while states with underdeveloped human capital lag behind, despite having access to technical infrastructure.

Third, inter-index analysis reveals a high degree of correlation between digital competitiveness and overall economic performance. In particular, countries that occupy leading positions in the WDCR also rank among the top positions in the GCI, indicating the integrative nature of digital processes.

Fourth, despite their obvious utility, all three indices have methodological limitations. Some indicators are based on expert surveys (for example, in the WEF), which introduces a subjective factor. Moreover, the pace of technological change

outstrips the updating of methodologies, meaning that existing indices may lag in reflecting the actual situation.

Fifth, information and communication indices form the foundation for global digital policy. They are utilized by international organizations such as the OECD, UNDP, and the EU as benchmarks for developing digital strategies, assessing digital inclusiveness, and formulating sustainable development goals.

Thus, information and communication indices serve as a key instrument for measuring and comparing the level of digitalization among the world's economies. They not only reflect the current state of digital development but also determine the strategic directions of the global economy's evolution. The analysis of the three leading indices – IDI (ITU), WDCR (IMD), and GCI (WEF) – demonstrates that a country's digital competitiveness is a multidimensional phenomenon that requires a comprehensive approach to measurement.

Further research should be directed toward integrating existing indices into a unified analytical model that combines both quantitative and qualitative parameters of digital transformation. This would enable a more accurate assessment of the effectiveness of digital strategies and a more precise forecast of the impact of ICT on the global economy.

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