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Article

Theoretical Basis of Anti-Monopoly Policy in Service Industries in the Context of Digital Transformation and the Importance of International Experience

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Abstract: This article analyzes the impact of digital transformation processes on market mechanisms, the competitive environment, and the antitrust control system in service industries theoretically and conceptually. The study scientifically demonstrates that the automation of service delivery processes based on digital technologies, platform models, and the expansion of e-commerce can increase market transparency and efficiency, reduce information asymmetry, and limit the possibility of abuse of monopoly positions. The article reveals the institutional significance of antitrust policy in protecting consumer interests, creating equal competition conditions for small and medium-sized service providers, and stimulating innovative activity in the context of the rapid concentration of digital platforms and large service providers. The combination of digital transformation and antitrust control is based on the assumption that economic efficiency, service quality, and price optimization will increase.

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Introduction

Digital transformation in service industries is emerging as a key factor in increasing the transparency, efficiency and effectiveness of market mechanisms. The automation of service delivery processes based on digital technologies, the expansion of platform models and electronic trading systems reduce information asymmetry between market participants [1]. This situation limits the ability of entities with a monopoly position to set prices, reduce the

quality of services or artificially increase barriers to entry. Strengthening antitrust control is of great importance in creating a healthy competitive environment in the digital services market [2]. Especially in the context of the rapid concentration of digital platforms and large service providers, the state's antitrust policy serves as an important institutional tool for protecting consumer interests, creating equal conditions for small and medium-sized service providers, and stimulating innovative activity.

The importance of digital transformation and antitrust control in service industries is determined, first of all, by increasing economic efficiency. Strengthening the competitive environment will improve the quality of services, make prices more affordable, and expand innovative services. This will directly affect the increase in the share of the service sector in GDP and improve the well-being of the population [3]. In addition, the integration of antitrust control with digital tools will increase the efficiency of public administration. Big Data, artificial intelligence, and digital monitoring systems will create the opportunity to analyze the market situation in real time. This is important for early detection and prevention of anti-competitive behavior.

Digital transformation in service industries essentially means a radical change in the processes of creating, providing, and consuming services based on digital technologies. This process includes not only technological innovation, but also the renewal of business models, management methods, and competition strategies. As a result, the services market will become more open, flexible, and dynamic.

The essence of antitrust control is a set of institutional and legal measures aimed at preventing market mechanisms from being disrupted, identifying and eliminating anticompetitive behavior [4]. In the context of digital transformation, this control also covers new areas such as algorithmic pricing, platform dominance, and limiting data monopoly. A distinctive feature of digital transformation in service industries is its speed and scale. Services through digital platforms can cover large areas in a short time, which leads to accelerated market concentration. Therefore, traditional competition control mechanisms may not be sufficiently effective in digital conditions.

A specific aspect of antitrust control is the emergence of non-traditional forms of competition in digital markets. For example, factors such as data collection through free services, cross-industry synergies, and platform dominance complicate the criteria for assessing competition. This situation requires new methodological approaches in antitrust policy. The deepening of digital transformation processes in service industries increases the need for scientifically based analysis and assessment in this area [5]. The digital services market is a complex system in which technological, economic and institutional factors are interrelated. Therefore, there is a need to study digital transformation and antitrust control based on a comprehensive scientific approach. The need for a scientific basis is also associated with increasing the effectiveness of antitrust policy. It is difficult to develop effective regulatory mechanisms without a thorough analysis of the patterns of development of digital markets. Therefore, empirical research and the use of econometric models in this area are of scientific importance.

Literature review. In recent years, the impact of digital transformation processes on market mechanisms and the competitive environment in service industries has become an important research area in the economic literature [6]. Foreign studies emphasize that digital technologies, by automating the processes of service development and delivery, increase market transparency and efficiency, reduce information asymmetry, and improve consumer welfare. At the same time, it is noted that the rapid formation of market concentration in the context of platform business models and network effects can lead to a restriction of competition and an increase in monopoly risks.

The issues of evaluating antitrust policy in the context of the digital economy have been analyzed by Katz and Shapiro, Varian, and other leading scholars, who have shown that

traditional approaches based on price and market share cannot fully reflect the zero-price and multifaceted characteristics of digital markets [7]. The OECD and European Commission reports emphasize the need to take into account factors such as platform dominance, data concentration, algorithmic pricing, and platform lock-in when assessing competition in digital markets.

In the empirical literature, market concentration indicators and econometric models are widely used to assess the relationship between digital transformation and the competitive environment, and it has been found that digital technologies can, on the one hand, enhance innovative activity, and on the other hand, strengthen the dominance of large platforms [8]. At the same time, the ex-ante regulatory mechanisms introduced in the European Union within the Digital Markets Act and the Digital Services Act are considered a new institutional approach aimed at protecting competition in the digital services market in advance.

Existing research on the CIS countries and Uzbekistan is mainly limited to describing regulatory and legal reforms, and a comprehensive and empirical assessment of the impact of digital transformation on the competitive environment and monopoly risks in service industries is not sufficiently developed. This study aims to fill this scientific gap.

Research methodology. This study aims to study the impact of digital transformation processes on market mechanisms, the competitive environment and the antitrust control system in service industries, using a comprehensive scientific and methodological approach [9]. The research methodology is based on a combination of theoretical analysis, institutional approach and empirical-econometric methods.

In the empirical analysis, market concentration indicators - Herfindahl-Hirschman index (HHI) and concentration coefficients (CR4, CR8) - are used to assess the competitive environment in service industries. The level of digital transformation is measured by the share of digital services, platform usage indicators and information and communication technology development indicators. Multivariate regression and panel data models are used to determine the relationship between digital transformation and the competitive environment [10].

The reliability of the research results is assessed through statistical significance tests and stability checks. The methodology used allows for a scientifically based analysis of the effectiveness of antitrust policy in the digital services market and the development of practical conclusions.

Analysis and results. In foreign scientific works, econometric models, DID and platform analysis are widely used, and the cause-and-effect relationship is deeply empirically substantiated. In the CIS countries, legal-institutional and normative analysis prevails [11]. The Uzbek approach, on the other hand, seeks to combine statistical, systemic and normative analysis, but empirical-econometric research is not yet sufficiently developed.

Foreign approaches serve to form global regulatory models by pre-regulating digital monopolies. Legal antitrust mechanisms suitable for digital markets are being developed in the CIS countries. The Uzbek approach, on the other hand, is aimed at creating an antitrust model adapted to the national services market, which is the main scientific direction for this dissertation.

The incomplete compatibility of foreign models with developing countries, insufficient consideration of technological dynamics in the CIS approaches, and the limited empirical database in Uzbekistan stand out as existing limitations. At the same time, the table provides a solid scientific basis for a critical analysis of foreign and regional experiences in the dissertation and the development of an integrated antitrust policy model suitable for Uzbekistan [12]. Our comparative analysis, by identifying the strengths and weaknesses of foreign and CIS approaches, justifies the need to develop a scientifically sound national model for assessing and improving antitrust policy in the context of digital transformation in the Uzbek services market. The comparative analysis shows that while foreign approaches

are aimed at pre-regulating platform monopolies in the digital services market, in the CIS countries these processes are mainly aimed at adapting existing antitrust legislation to the digital environment. The experience of Uzbekistan, while accelerating digital transformation, indicates the need to improve institutional and regulatory mechanisms to form a healthy competitive environment in service industries. Although foreign scientific research has studied digital transformation in service industries in depth mainly in the context of platform economy, network effects and Big Tech monopolies, these studies have not sufficiently developed a single, integrated conceptual model of digital transformation and antitrust control. Most works consider digital technologies separately, and antitrust policy as an independent direction.

In the CIS and Uzbekistan studies, the relationship between digital transformation and competition policy is covered more at a normative or descriptive level, and their interaction and synergistic effect have not been scientifically modeled sufficiently [13]. Therefore, there is no integrated scientific model combining digital transformation and antitrust control for service industries.

There is a lack of scientific research aimed at studying digital transformation and antitrust control in service industries based on a single, systematic and integrated conceptual model. Most foreign studies analyze digital transformation and antitrust policy in the context of the general digital economy or industrial and platform markets. In this case, the specific aspects of service industries - intangibility, service quality, direct contact with the consumer, and territorial differences - are not sufficiently taken into account.

In the studies conducted by scientists from Uzbekistan and the CIS, the service sector is mainly considered within the framework of public services or the general competitive environment, and the formation of digital monopolies and control mechanisms in the private services market have not been thoroughly empirically analyzed.

There is a lack of scientific research that comprehensively analyzes digital transformation and antitrust control, taking into account the specific characteristics of service industries.

In foreign scientific works, the relationship between digital transformation and competition policy has been empirically proven through DID, panel regression, and structural models. However, in the CIS and especially in Uzbekistan, this issue is limited to more theoretical and normative analysis.

In Uzbekistan, econometric models that quantitatively assess the impact of digital transformation on market concentration, competitive environment, and monopoly risks in service industries have hardly been developed. This limits the practical value of scientific conclusions. There is a lack of empirical studies that assess the impact of digital transformation on antitrust control and the competitive environment in service industries in Uzbekistan based on econometric models. In foreign countries, mechanisms for ex-ante regulation, algorithmic monitoring and limiting data dominance have been developed for digital platforms. In the CIS countries, these mechanisms are being adapted more within the framework of traditional antitrust legislation [14]. In the conditions of Uzbekistan, a scientifically based mechanism for regulating the digital services market that takes into account the national economic structure, institutional capabilities and level of digital maturity has not been sufficiently developed. In the conditions of digital transformation in the services market of Uzbekistan, scientifically based regulatory mechanisms adapted to national conditions have not been sufficiently developed. The aim is to study the impact of digital transformation processes on the antitrust and competitive environment in service industries based on a systematic, integrated and empirical-econometric approach and to develop scientifically based conceptual and regulatory mechanisms adapted to the conditions of Uzbekistan.

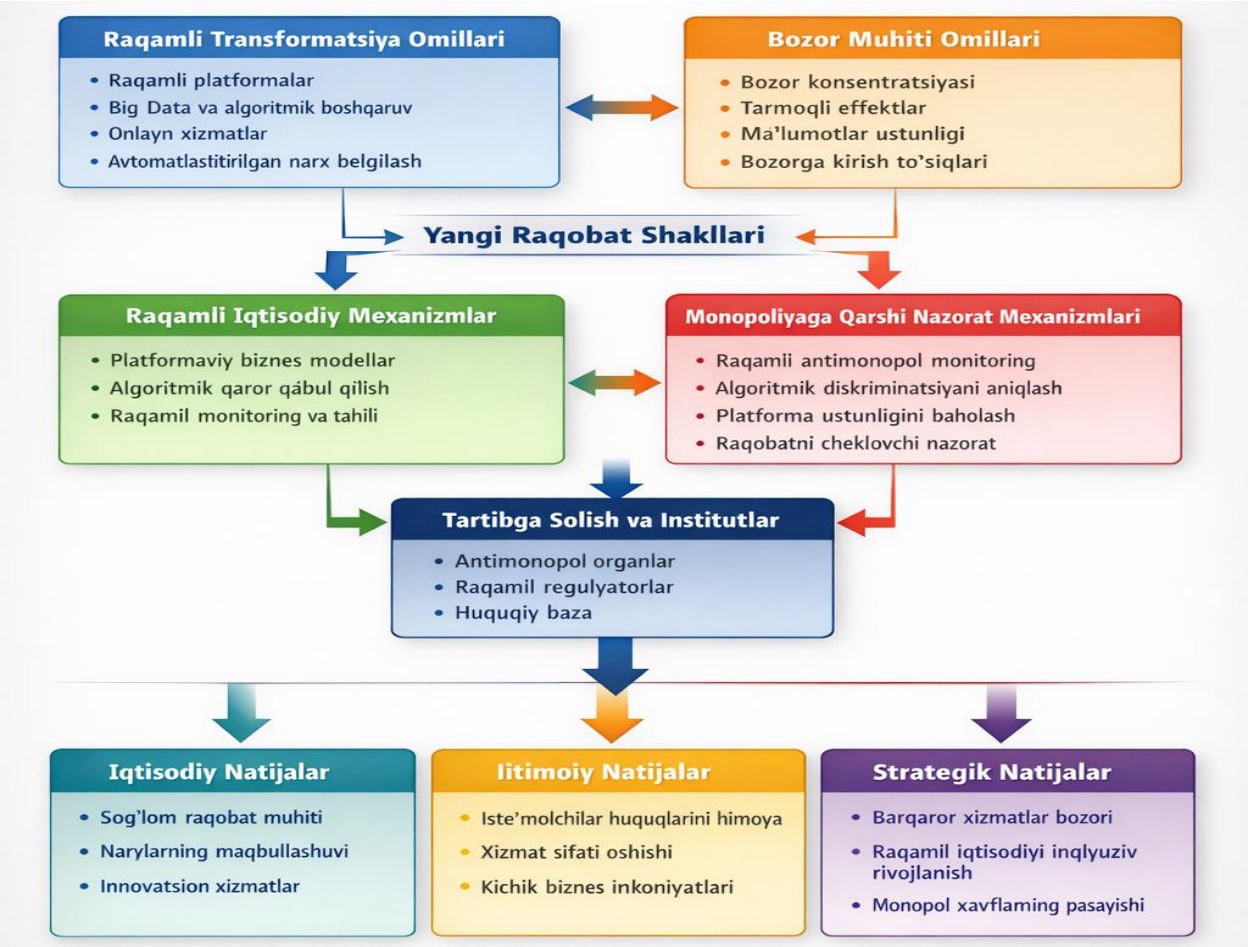

Figure 1. A conceptual framework that provides a systematic and integrated representation of the relationship between digital transformation processes and antitrust regulation in service industries.

It represents a conceptual model that systematically and integratedly reflects the interrelationship between digital transformation processes and antitrust control in service industries [15]. The model describes the economic, institutional and competitive processes arising from the penetration of digital technologies into the services market in a logical sequence, which allows for a deep understanding of the modern development mechanisms of the services sector (Figure 1).

Conclusions and recommendations. The results of the study show that digital transformation processes in service industries have a positive impact on the competitive environment by increasing the transparency, speed and efficiency of market mechanisms. Digital platforms, Big Data and algorithmic management improve the quality and speed of services, reduce information asymmetry and expand consumer interests. At the same time, the acceleration of market concentration in the context of network effects and platform dominance leads to increased monopoly risks and demonstrates the inadequacy of traditional antitrust control mechanisms.

Based on the conceptual model, it is determined that digital transformation factors and market environment factors interact and create new forms of competition. This process requires the integral integration of digital economic mechanisms and antitrust control mechanisms. Modern antitrust tools such as digital monitoring, algorithmic discrimination detection and platform dominance assessment allow for the early detection of antitrust behavior.

Based on these conclusions, the following proposals are put forward: first, the introduction of an integrated antitrust assessment model in the services sector, combining structural, behavioral, platform and empirical approaches; second, the widespread use of digital monitoring systems based on Big Data and artificial intelligence in the activities of antitrust authorities; third, the development of ex-ante regulatory mechanisms aimed at enhancing transparency and data portability for digital platforms. These proposals will serve to ensure healthy competition in the digital services market and reduce monopoly risks.

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