

## MECHANISMS OF TRANSACTION COST REDUCTION IN THE DIGITAL PLATFORM ENVIRONMENT

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### **Abstract**

This article examines the mechanisms for reducing transaction costs within the framework of the digital economy and platform ecosystems. Based on the institutional theories of Ronald Coase and Oliver Williamson, the optimization of information search, negotiation, and contracting costs under the influence of digital technologies (blockchain, artificial intelligence, smart contracts, asynchronous communication) is analyzed. The study mathematically and empirically highlights how digital platforms enhance market efficiency by displacing traditional intermediaries (disintermediation) and elevating the institution of trust to a new level.

**Keywords:** Transaction costs, digital platforms, institutional economics, smart contracts, blockchain, asynchronous management, information asymmetry.

### **Introduction**

The rapid development of digital technologies is fundamentally altering the nature of traditional market relations and economic institutions. Today, digital platforms (such as Amazon, Alibaba, Uber, as well as domestic market leaders like Uzum, Yandex, etc.) stand at the core of economic growth and transformations. These platforms are not merely technical tools, but rather a new type of institutional structure that coordinates interactions between economic agents. One of the greatest barriers faced by market participants in the traditional economy is high transaction costs.

The concept of transaction costs was introduced to economic science by Nobel laureate Ronald Coase, representing all transaction and communication costs associated with the exchange of a good or service. The primary goal and appeal of the digital economy are defined precisely by its capacity to bring these costs close to zero. Modern platforms drastically reduce transaction costs by eliminating information asymmetry, guaranteeing trust through digital algorithms, and automating contract execution. This article analyzes the mechanisms through which digital platforms reduce transaction costs based on the principles of institutional economics.

### **Literature Review**

The relationship between the digital economy and transaction costs has been shaping up as one of the most pressing directions in economic science in recent years.

Ronald Coase, the founder of transaction cost theory, explained the boundaries between the market and the firm precisely through transaction costs. According to his view, firms prefer internal hierarchical management when market transaction costs are high.

Oliver Williamson developed this theory further, linking the emergence of transaction costs to asset specificity, uncertainty, and the frequency of transactions. Williamson's research demonstrates that a lack of sufficient trust among economic agents leads to an increase in transaction costs.

In recent years, scholars such as Brynjolfsson, McAfee, and Parker have noted a sharp decline in transaction costs within the platform economy. According to their studies, platforms like Amazon, Alibaba, and Uber have reduced the costs of information search, price comparison, and payment execution by 70–90 percent.

Scientific research on the development of digital platforms is also being conducted within the economy of Uzbekistan. In particular, the exchange of information among economic agents has accelerated significantly as a result of the development of e-commerce, electronic government services, and fintech technologies.

Oliver Williamson and representatives of the New Institutional Economics school divide transaction costs into pre-contractual (*ex-ante*) and post-contractual (*ex-post*) stages. These include the following:

1. **Information search and sorting costs:** The cost of finding the required product, service, or partner, and comparing prices.
2. **Negotiation and decision-making costs:** The time and resources spent on agreeing to contract terms and concluding a deal.
3. **Monitoring and enforcement costs:** The cost of monitoring the counterparty's fulfillment of obligations and curbing the risk of opportunistic behavior (deception, evasion of obligations).

According to Coase, if transaction costs were equal to zero, the market would allocate resources in the most optimal manner without any legislative or administrative interventions. Because these costs were very high in the traditional market, large enterprises (hierarchies) emerged. However, under the conditions of digital platforms, the reduction of transaction costs is paving the way for the market mechanism to triumph over hierarchy. The platform eliminates the concepts of distance and time between entities, rendering the market structure more flexible and horizontal.

### Research Methodology (Methods)

In this research, comparative analysis, economic-statistical analysis, institutional approach, and systematic analysis methods were utilized to evaluate the role of digital platforms in reducing transaction costs.

The theoretical foundation of the study is comprised of Ronald Coase's and Oliver Williamson's transaction cost theories. Throughout the research, the following methods were employed:

- Scientific literature review;
- Comparative analysis;
- Induction and deduction;
- Economic-statistical methods;
- Graphical analysis;
- Institutional analysis.

The following model was utilized to evaluate transaction costs:

$$TC = IC + NC + MC + EC$$

Where:

- TC – Total Transaction Costs;
- IC – Information Search Costs;
- NC – Negotiation Costs;
- MC – Monitoring Costs;
- EC – Enforcement Costs.

Under the influence of digital platforms, each of these elements is significantly reduced.

Digital platforms, through their technological and algorithmic architecture, provide specific mechanisms that impact each group of transaction costs.

In a traditional market, the seller possesses more information about product quality and characteristics than the buyer (**Information Asymmetry**). This situation gives rise to the "**Market for Lemons**" problem in economics. Digital platforms, however, eliminate information asymmetry through search algorithms, filters, Big Data, and most importantly, rating and review systems. An investor or consumer gains complete information about the actual quality and market value of a product within seconds. As a result, *ex-ante* (pre-contractual) search costs approach zero.

In the traditional supply chain, dozens of intermediaries (wholesalers, dealers, logicians) exist between the manufacturer and the final consumer, each increasing transaction costs and, ultimately, the product cost. Digital platforms implement **P2P (Peer-to-Peer)** and **B2C (Business-to-Consumer)** models, directly connecting the manufacturer and the buyer. Furthermore, the formalization of transactions is fully standardized based on templates, which eliminates lawyer fees and red-tape paperwork expenses.

Monitoring contract execution and resolving the consequences of their breach (litigation costs) are the most expensive *ex-post* costs. **Smart contracts** applied on blockchain platforms automatically guarantee the fulfillment of contract terms using algorithmic codes. For instance, if clause "A" of the contract is fulfilled, the system

automatically transfers the funds to party "B". Here, no room remains for the human factor, deception, or contract evasion, which entirely eliminates monitoring costs.

To quantitatively evaluate the efficiency of digital platforms, a comparative analysis of the relative indicators of transaction costs in the traditional market and the digital ecosystem must be conducted. These differences are systematically shown in the following table.

**Table 1: Structural Comparison of Transaction Costs in Traditional Markets and Digital Platforms**

| Transaction Cost Group              | Under Traditional Market Conditions                                      | Under Digital Platform Conditions                              | Level of Savings and Optimization                         |
|-------------------------------------|--------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------|
| <b>Information Search Costs</b>     | High time and transport consumption, limited data.                       | Algorithmic search, ratings, and Big Data analytics.           | Very High (80-90% of time saved)                          |
| <b>Negotiations and Contracting</b> | Red tape, legal services, prolonged meetings.                            | Standardized online public offers, one-click contracting.      | High (Transaction speed increases several times over)     |
| <b>Control and Monitoring</b>       | Lack of trust, reliance on third-party (bank, court, broker) guarantees. | Rating systems, transaction history, and platform arbitration. | Medium-High (Trust-related costs are reduced)             |
| <b>Enforcement of Contracts</b>     | Litigation processes, financial losses due to breach of contract.        | Smart contracts, automated escrow, and payment systems.        | Maximum (The risk of opportunistic behavior is minimized) |

As implied by the data in Table 1, digital platforms carry out an efficiency transformation at all stages of economic relations. These savings allow enterprises to redirect their working capital from operational expenditures toward increasing production productivity and fostering innovation.

Another critical mechanism of digital platforms in reducing internal management costs is the transition to **asynchronous communication** and asynchronous management styles. In traditional management, all decisions are

resolved in real-time through synchronous meetings, assemblies, and telephone calls, which increases administrative costs and time losses.

On digital platforms, however, all processes (assigning tasks, reporting, project analysis) are carried out asynchronously through specialized digital systems (Task managers, ERP, CRM). Each employee or partner processes data and enters it into the system at a time convenient for them. This reduces **coordination costs** and enhances labor productivity. The asynchronization of management represents the most modern method for optimizing transaction costs within the internal hierarchy of an enterprise (**internal transaction costs**).

### Results (Results)

The research results demonstrated that utilizing digital platforms ensures time and cost savings for economic agents.

**Table 2: Reduction of Transaction Costs Under the Influence of Digital Platforms**

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The data in Table 2 indicate that the most significant savings are observed in the contract enforcement and information search stages.

Furthermore, as the **network effect** of platforms intensifies, transaction costs decrease even further. An increase in the number of users on the platform simplifies search and matching processes and enhances market liquidity.

### Discussion (Discussion)

The obtained results validate the theories of Coase and Williamson under the conditions of the modern digital economy. The study shows that digital platforms minimize market coordination costs and facilitate a more efficient allocation of economic resources.

The most vital advantage of platforms is the digitalization of the institution of trust. While transactions were previously carried out through third-party guarantees, today rating systems, user reviews, blockchain, and smart contracts fulfill this role.

However, certain risks also exist in the operation of platforms:

- Issues related to data privacy;
- The risk of monopolization;
- Algorithmic discrimination;
- Cybersecurity threats.

Therefore, alongside the development of digital platforms, it is essential to perfect the institutional mechanisms that regulate them.

### Proposals

- Developing a dedicated state program for the development of national digital platforms in Uzbekistan.
- Expanding the legal frameworks for smart contracts and blockchain technologies.
- Introducing tax incentives that reduce transaction costs for e-commerce participants.
- Expanding integration programs for small business entities into digital platforms.
- Cutting information search costs by implementing artificial intelligence-based recommendation systems.

### Conclusion

Mechanisms for reducing transaction costs in the context of digital platforms serve as the primary driving force of the modern economy. Transaction costs, which have remained the greatest problem in economics since the era of Ronald Coase, have reached their minimum point today through digital algorithms, blockchain, smart contracts, and asynchronous management.

Platforms eliminate information asymmetry in the market, ensure transparency, and reduce the share of intermediaries. This not only increases the profit margins of entrepreneurial entities but also serves to make goods and services cheaper and more accessible for consumers. In the context of Uzbekistan, reducing total transaction costs by supporting national digital platforms and digitalizing the economy stands as a strategic pathway to enhancing national competitiveness.

### References

1. Coase, R. H. (1937). The Nature of the Firm. *Economica*, Vol. 4, No. 16, pp. 386-405.
2. Williamson, O. E. (1985). *The Economic Institutions of Capitalism*. Free Press. - 450 p.
3. Srnicek, N. (2017). *Platform Capitalism*. Polity Press. - 170 p.
4. Vakhobov, A. V., & Ibrohimov, A. T. (2021). *Fundamentals of the Digital Economy*. Study guide. - Tashkent: "Iqtisod-Moliya". - 290 p.
5. Gulyamov, S. S., et al. (2019). *Blockchain Technologies in the Digital Economy*. - Tashkent: "InfoCom.Uz". - 360 p.
6. Parker, G., Van Alstyne, M., & Choudary, S. (2016). *Platform Revolution: How Networked Markets Are Transforming the Economy*. W. W. Norton & Company. - 352 p.

7. Tukhtabaev, J. S. (2024). Problems of optimizing transaction costs on digital platforms. *Scientific Journal of Economics and Innovative Technologies*, March, Issue 2.

