UDC 332.85

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The Real Estate Services Market as an Institutional System: Digital Transformation and Cyclical Dynamics

This article examines the real estate services market not as a secondary infrastructure element but as an independent institutional and economic system that plays a key role in coordinating real estate market players. The purpose of the study is to identify the mechanisms through which this market is transformed under the concurrent influence of digitalization and macroeconomic cyclicality. The methodological framework of the study comprises institutional economics, transaction cost theory, and the concept of information asymmetry, which together make it possible to reconsider the functional role of real estate services under conditions of incomplete information. The authors demonstrate that digitalization is a key factor in market restructuring by reducing search costs, accelerating transactions, and facilitating the formation of integrated digital ecosystems, whereas economic cyclicality does not so much determine the total market volume as shape its dynamic configuration by redistributing demand across segments. Given the limited availability of direct statistical data, the study applies an original proxy approach to assessing digitalization based on macroeconomic and infrastructure indicators. The scientific novelty of the study lies in the integration of digital and cyclical factors into a single extended econometric model that also accounts for the prevailing type of strategic behavior among participants. The proposed three-level model (operational, institutional, and digital levels) demonstrates that sustainable market development is possible only when long-term strategies dominate, ensuring institutionalization and technological transformation, while short-term strategies increase volatility and reduce the effectiveness of market mechanisms. The findings are relevant for improving the management and regulation of the real estate services market in the digital economy.
Keywords: *transaction costs, real estate management, institutional economics, digitalization, cyclicality*



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In modern economic literature, the real estate market is mainly analysed through the prism of the circulation of tangible assets. At the same time, the services that ensure the operation of this market are often regarded as secondary elements without independent economic value.

However, it is the services market that shapes the institutional environment in which economic agents interact, reducing uncertainty and coordination costs. In the context of digitalization and increasing macroeconomic volatility, the role of this segment as a key element of market infrastructure needs to be reconsidered [1].

From the perspective of institutional economics, the real estate services market can be interpreted as a mechanism that structures interactions between market players under conditions of incomplete information. In contrast to the classical approach, the focus shifts from describing types of services to analyzing their functional role in reducing transaction costs [2, 3].

Conceptually, the real estate services market performs three interrelated functions [4, 5]:

- informational: reducing information asymmetry;
- coordination: aligning the interests of market players;
- guarantee-related: reducing risks and uncertainty.

Thus, real estate services are not merely an auxiliary element but an institutional mechanism that ensures market stability.

The scientific novelty of the study consists in:

- interpreting the real estate services market as an institutional coordination mechanism;
- integrating digital and cyclical factors into a single development model;
- applying a proxy approach to assess market digitalization under conditions of limited statistical data.

Systems analysis makes it possible to identify three levels of market functioning:

1. Operational level — services directly related to the conclusion of transactions.
2. Support level — legal and valuation support.
3. Strategic level — asset management and investment consulting.

This structure reflects not so much a classification of services as the distribution of functions in the process of economic value creation [6].

The functioning of the real estate services market is associated with a number of systemic limitations arising from its institutional specificity.

A key feature is the heterogeneity of service quality associated with the absence of uniform standards and insufficient professionalization in individual segments. This leads to higher transaction costs and lower trust among market players [7, 8].

Another factor is limited information transparency, which amplifies information asymmetry and reduces the effectiveness of price signals [9].

The digitalization of the real estate services market is not a mere introduction of technology but a transformation in the logic of market functioning [10, 11].

The use of digital platforms, data-processing algorithms, and online interaction tools leads to:

- lower information search costs;
- faster conclusion of transactions;
- generation of new business models.

As a result, the market transitions from a fragmented structure to integrated digital ecosystems [12, 13].

In the absence of direct statistical indicators of the digitalization of the real estate services market, this study uses a proxy approach based on an analysis of the World Bank's infrastructure and macroeconomic indicators (Table).

Indicators of the digital and economic environment in selected major economies

Country	GDP, USD trillion	Internet users, %	Broadband access	Net foreign direct investment (% of GDP)
Russia	2.17	94	25.8	–0.4
USA	28.75	93	38.1	1.0
China	18.74	92	44.7	0.1

A comparative analysis showed that[1]:

- the United States has the most developed digital environment;
- China demonstrates the rapid scaling of digital solutions;
- Russia is characterized by a high level of basic digital accessibility but lags behind in terms of investment activity and infrastructure saturation.

Therefore, markets differ in their potential for digital transformation.

The real estate services market exhibits pronounced sensitivity to the phases of the economic cycle; however, this dependence is not linear but structural.

During phases of economic growth, the intermediary services segment expands, whereas during periods of recession, demand shifts towards asset management and crisis management consulting [14].

Thus, cyclicality affects not so much the overall volume of the market as the redistribution of functions among its segments.

Taking the identified factors into account, market development can be formalized as follows (1):

$$Y_{it} = \beta_0 + \beta_1 \cdot Dig_{it} + \beta_2 \cdot Mac_{it} + \beta_3 \cdot Invest_{it} + \beta_4 \cdot Cycle_{it} + \varepsilon_{it}, \quad (1)$$

where Y_{it} denotes the share of digital services;

β_0 denotes the constant value;

β_1–β_4 denote weighting factors for variables;

Dig_{it} denotes a digitalization index;

Mac_{it} denotes macroeconomic dynamics;

$Invest_{it}$ denotes investments in the sector;

$Cycle_{it}$ denotes a phase in the economic cycle (growth/decline);

ε_{it} denotes the stochastic error term capturing the effects not explained by the included factors;

i denotes a country;

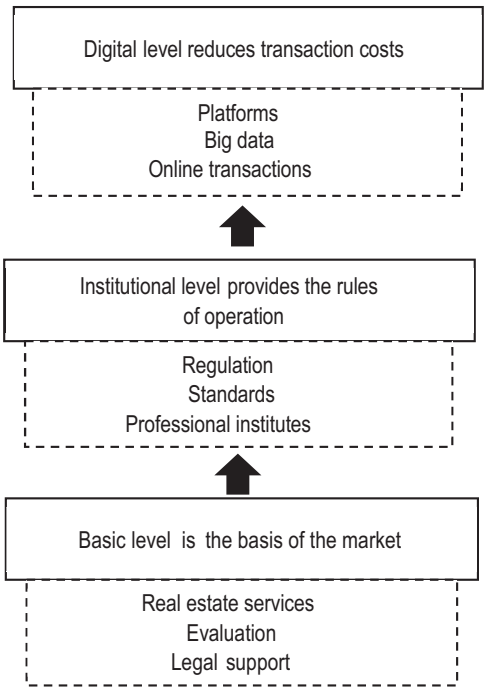
t denotes a year.

This model reflects the multicomponent nature of market transformation, in which digitalization is the main driver and macroeconomic dynamics determines the trajectory of change.

The proposed model has three levels (Fig.):

1. Operational level (provision of services).
2. Institutional level (rules and regulations).
3. Digital level (technological infrastructure).

[1] Property Technology (Proptech) Market Report 2026. Web-site "Research and Markets". URL: https://www.researchandmarkets.com/reports/5953272/property-technology-proptech-market-report#product--toc



A three-level model of real estate services market transformation

Economic cyclicality acts as an external parameter that modifies the interaction between levels and affects the speed of market transformation.

The development of the real estate services market is largely determined by the strategic orientations of its players, which can be broadly divided into short-term and long-term orientations.

A short-term strategy, focused on rapid profit generation, is characterized by a concentration on intermediary services, high transaction intensity, and minimized infrastructure development costs. Under this model, market players focus on current market conditions, which increases market sensitivity to price fluctuations and contributes to the growth of speculative activity.

By contrast, a long-term strategy involves the formation of sustainable business models based on real estate management, the development of service infrastructure, and the introduction of digital technologies. Long-term-oriented players invest in improving service quality, standardizing processes, and developing customer relationships.

Comparative analysis shows that the predominance of short-term strategies leads to market fragmentation and reduced institutional stability, while the dominance of long-term strategies contributes to the formation of integrated ecosystems and a reduction in transaction costs [15, 16].

The strategic orientation chosen by market players is closely related to phases of the economic cycle. During periods of economic growth, the share of short-term strategies increases, driven by higher market liquidity and opportunities for rapid profit. In the context of an economic downturn, by contrast, the importance of long-term strategies focused on asset management and risk reduction increases.

Thus, economic cyclicality affects not only the volume of the real estate services market but also the strategic structure of the play-

ers' behavior patterns. The cyclical model can be expressed as follows:

$$Y_{it} = \beta_0 + \beta_1 \cdot Dig_{it} + \beta_2 \cdot Mac_{it} + \beta_3 \cdot Invest_{it} + \\ + \beta_4 \cdot Cycle_{it} + \beta_5 \cdot Strat_{it} + \varepsilon_{it}, \quad (2)$$

where β_1–β_5 denote weighting factors for variables;

$Strat_{it}$ denotes the prevailing type of strategic behavior of market players.

To describe market dynamics more accurately, a variable reflecting the prevailing type of strategic behavior among participants (short-term or long-term orientation) is introduced into the model to account for the impact of the investment horizon on the structure and stability of the real estate services market.

The results indicate that sustainable development of the real estate services market is possible only when long-term strategies dominate, ensuring the institutionalization and digital transformation of the market. The predominance of short-term strategies, by contrast, increases volatility and reduces the effectiveness of market mechanisms.

The study makes it possible to consider the real estate services market as a complex dynamic system whose development is determined by the interaction of technological, institutional, and macroeconomic factors.

The study establishes that digitalization is a key driver of market transformation, while economic cyclicality shapes the structural dynamics of the market. Taking these factors into account can increase the efficiency of management and regulation in the real estate services market.

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Рынок услуг в сфере недвижимости как институциональная система: цифровая трансформация и циклическая динамика

В статье рассматривается рынок услуг в сфере недвижимости как самостоятельная институционально-экономическая система, обеспечивающая координацию участников рынка объектов недвижимости. Цель исследования заключается в выявлении механизмов трансформации рынка услуг недвижимости под влиянием цифровизации и макроэкономической цикличности. Методологической основой выступают положения институциональной экономики, теории транзакционных издержек и концепции информационной асимметрии. В работе применяется прокси-подход к оценке цифровизации рынка на основе совокупности макроэкономических и инфраструктурных индикаторов. В результате установлено, что цифровизация выступает ключевым фактором структурной перестройки рынка услуг недвижимости, тогда как экономическая цикличность определяет его динамическую конфигурацию. Предложена расширенная модель, учитывающая взаимодействие технологических, институциональных и макроэкономических факторов.

Ключевые слова: *транзакционные издержки, управление недвижимостью, институциональная экономика, цифровизация, цикличность*

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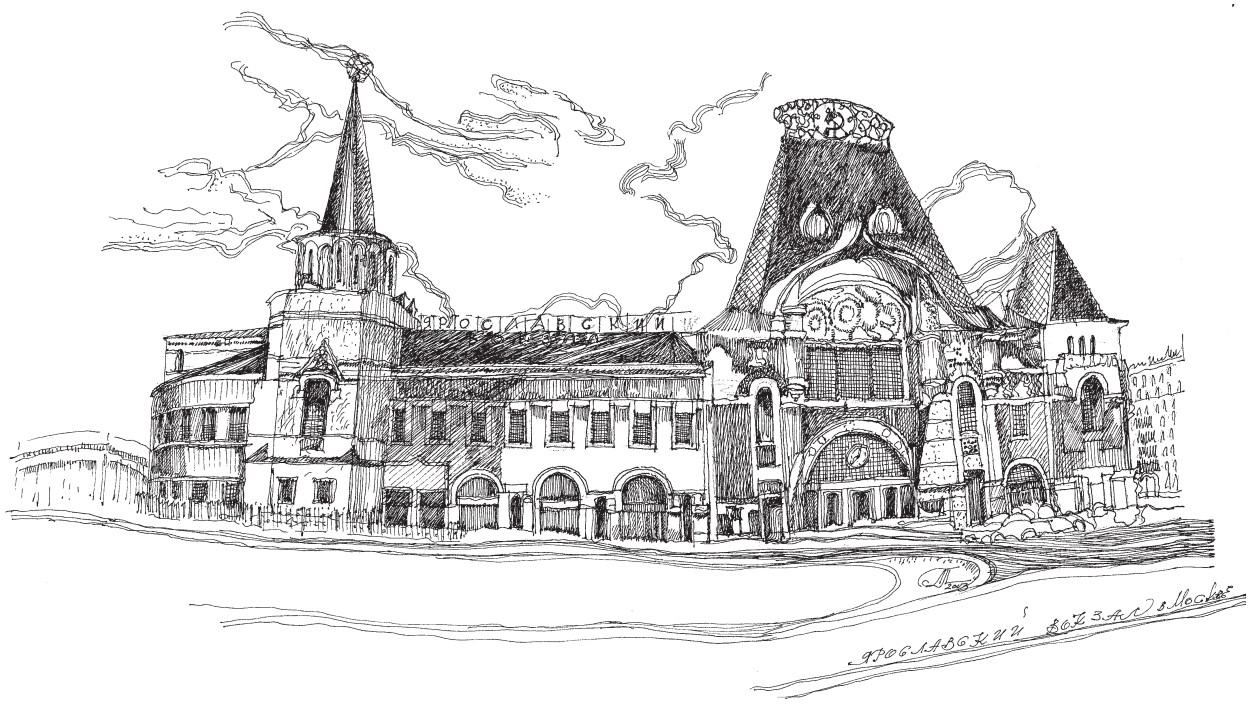
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For citation: Sarchenko V.I., Khirevich S.A. The Real Estate Services Market as an Institutional System: Digital Transformation and Cyclical Dynamics. *Real Estate: Economics, Management*. 2026; 2:27-30.

Для цитирования: *Сарченко В.И., Хиревич С.А.* The Real Estate Services Market as an Institutional System: Digital Transformation and Cyclical Dynamics // Недвижимость: экономика, управление. 2026. № 2. С. 27–30.



Москва. Ярославский вокзал. Рисунок, тушь, перо