

## Artículo de investigación

**Features of socio-economic systems' transformation processes management**

Особенности управления трансформационными процессами социально-экономических систем

Características de la gestión de los procesos de transformación de los sistemas socioeconómicos

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**Abstract**

In the 21st century, the main trend in the development of society is widespread digitalization. It arose due to the emergence of the Internet and the rapid development of electronic computers. The influence of digitalization determines the scientific relevance of the research. Purpose. The purpose of the study is to reveal features of socio-economic systems' transformation processes management at each stage of evolution. To achieve this goal the following tasks have been solved: - A qualitative scheme for changing the structure of the world economy under the influence of industrial revolutions has been presented; - The approach to socio-economic systems' transformation processes management from the society typologization standpoint has been systematized; - The essence of the crypto economy as a

**Аннотация**

в 21 веке основным трендом развития общества является повсеместная цифровизация, которая возникла благодаря возникновению интернета и стремительному развитию ЭВМ (электронно-вычислительных машин). Под воздействием цифровизации управление трансформационными процессами социально-экономической системы обуславливают актуальность выбранной темы исследования.

Цель.

Целью исследования является раскрытие особенностей управления трансформационными процессами социально-экономических систем на каждом этапе эволюции.

Для достижения поставленной цели решены следующие задачи:

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particular case of digital society has been revealed. Results.

1. An aggregated typology of socio-economic systems' transformation development in the conditions of digital society has been constructed.
2. An improved scheme of changes in the structure of the world economy under the supervision of industrial revolutions has been constructed.
3. The main theories of socio-economic systems' transformation management have been considered.
4. The characteristic features of socio-economic systems' transformation have been revealed.
5. A detailed classification of socio-economic systems' transformation processes management from the position of society typologization has been proposed.
6. The essence of digital society has been disclosed and its categories have been substantiated. Conclusions/Relevance. Today socio-economic systems' transformation processes management in the conditions of digitalization and widespread change in business processes is a pressing challenge. New business models that take into account digitalization will discredit modern approaches to management and business. The need for cognitive communication between people has always existed, and ubiquitous digitalization reduces the time of communication between people and consumer behavior, which allows highlighting the following types of economies: digital economy, virtual economy, sharing economy, crypto economy.

**Keywords:** Management, socio-economic system, transformation, system sustainability, digital society.

- представлена качественная схема изменения структуры мировой экономики под влиянием промышленных революций;
- систематизирован подход к управлению трансформационными процессами социально-экономических систем с позиции типологизации общества;
- раскрыта сущность криптоэкономики, как частного случая цифрового общества.

Результаты исследования:

1. Построена агрегированная типология развития трансформации социально-экономических систем с учетом цифрового общества.
2. Улучшена схема изменения структуры мировой экономики под влиянием промышленных революций.
3. Рассмотрены основные теории трансформации управления социально-экономических систем.
4. Раскрыты характерные признаки управления социально-экономическими системами.
5. Предложена развернутая классификация управления трансформационными процессами социально-экономических систем с позиции типологизации общества.
6. Раскрыта сущность цифрового общества и обоснованы его категории.

Выводы / значимость. Управление трансформационными процессами в социально-экономических системах под воздействием цифровизации и повсеместным изменением бизнес-процессов является актуальным вызовом современности. Новые бизнес-модели с учетом цифровизации будут дискредитировать современные подходы к управлению и ведению бизнеса. Потребность в когнитивной коммуникации людей всегда была, а под воздействием повсеместной цифровизации сокращает время коммуникации между людьми и потребительским поведением (с развитием цифровых платформ), что породило выделить следующие виды экономики (цифровая экономика; виртуальная экономика: экономика совместного потребления; криптоэкономика).

**Ключевые слова:** управление, социально-экономические системы, трансформация, устойчивость системы, цифровое общество.

## Resumen

En el siglo XXI, la tendencia principal en el desarrollo de la sociedad es la digitalización generalizada, que surgió debido al advenimiento de Internet y al rápido desarrollo de las computadoras (computadoras electrónicas). Bajo la influencia de la digitalización, la gestión de los procesos de transformación del sistema socioeconómico determina la relevancia del tema de investigación elegido.

Propósito

El objetivo del estudio es revelar las características de la gestión de los procesos de transformación de los sistemas socioeconómicos en cada etapa de la evolución.

Para lograr este objetivo, se resolvieron las siguientes tareas:

-Se presenta un esquema cualitativo para cambiar la estructura de la economía mundial bajo la influencia de las revoluciones industriales;

- Un enfoque sistemático para la gestión de los procesos de transformación de los sistemas socioeconómicos desde el punto de vista de la tipología de la sociedad;

- Se revela la esencia de la criptoconomía, como un caso especial de una sociedad digital.

Los resultados del estudio:

1. Se construye una tipología agregada del desarrollo de la transformación de los sistemas socioeconómicos, teniendo en cuenta la sociedad digital.

2. Mejorado el patrón de cambio de la estructura de la economía mundial bajo la influencia de las revoluciones industriales.

3. Se consideran las teorías básicas de transformación de la gestión de los sistemas socioeconómicos.

4. Se revelan los rasgos característicos de la gestión de los sistemas socioeconómicos.

5. Se propone una clasificación detallada de la gestión de los procesos de transformación de los sistemas socioeconómicos desde el punto de vista de la tipología de la sociedad.

6. Se revela la esencia de la sociedad digital y se confirman sus categorías.

Conclusiones / relevancia. La gestión de los procesos de transformación en los sistemas socioeconómicos bajo la influencia de la digitalización y el cambio generalizado en los procesos comerciales es un desafío urgente de nuestro tiempo. Los nuevos modelos de negocio, teniendo en cuenta la digitalización, desacreditarán los enfoques modernos para gestionar y realizar negocios. La necesidad de comunicación cognitiva de las personas siempre ha sido, y bajo la influencia de la digitalización ubicua reduce el tiempo de comunicación entre las personas y el comportamiento del consumidor (con el desarrollo de plataformas digitales), lo que ha llevado a distinguir los siguientes tipos de economía (economía digital; economía virtual: economía de consumo compartido; criptoconomía).

**Palabras clave:** Gestión, sistemas socioeconómicos, transformación, estabilidad del sistema, sociedad digital.

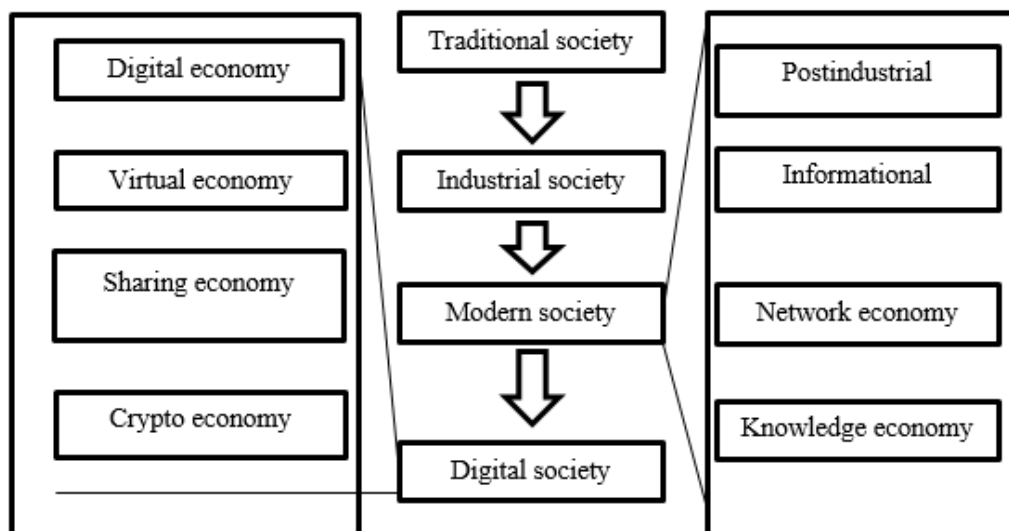
## Introduction

The Relevance. The degree of organization and controllability of the socio-economic system is determined by the fact that its participants have information about events occurring in its external and internal environment, about changes in parameters of its functioning and development. By helping to reduce uncertainty, information limits growth trends. Information contributes to a transfer of the system to a more organized, manageable state. It counteracts disorganization and entropy, leads to streamlining of structure, increasing the system's efficiency of functioning. It is especially relevant to identify the features of socio-economic systems' transformation processes management at each stage of evolution.

A number of researchers (Williamson, 2000; Pshenichnikov, & Babkin, 2017; Apatova et al., 2017, Varnaliy et al., 2018; Vovchenko et al., 2017; Reutov et al., 2018; Babkin et al., 2018; Simchenko et al., 2015, Pinkovetskaia, 2019). have separately dealt with the study of socio-economic systems' transformation processes management. However, each stage of evolution has not yet been reflected.

## Methods

A socio-economic system's transformation under the influence of digitalization was considered from the perspective of society typology of socio-economic systems' transformation. Transformation of socio-economic systems was also revealed (Fig. 1, Table 1).

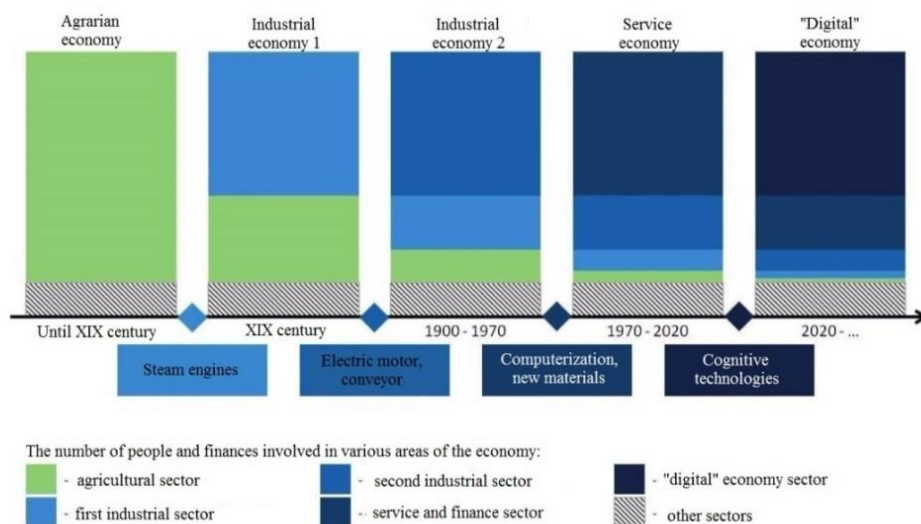


Source: compiled by the authors.

**Figure 1.** The Aggregated typology of socio-economic systems' transformation development.

Thus, socio-economic systems' transformation from the standpoint of society typology includes traditional, industrial, modern and digital society. We expanded the classification with the digital type of society.

Considering the transformation of the socio-economic system solely based on the economic component and the dominant influence of industrial revolutions, the transformation itself can be represented in the following way (Fig. 2).



Source: (Keshelava, 2017).

**Figure 2.** The qualitative scheme of changes in the structure of the world economy under the influence of industrial revolutions.

## Results and Discussion

In modern science, the essence of economic systems' management development is revealed through various theories, each of which specializes in a particular type of transformation, which is presented in Table 1.

**Table 1.** The main theories of socio-economic systems' management transformation

Nº	Theory name	Representatives	Essence of transformation
1	Theory of Transition Economics	S.P. Aukadek, L.I. Abalkin, A.V. Buzgalin	Intersystem and revolutionary transformations, i.e. the transition from self-reproducing to a qualitatively new economic system
2	Theory of Self-Preservation (Self-Development)	D. North, R. Thomas, E.D. Sorokin, G. Haken, A. Neiman	Internal and evolutionary transformations occur due to the changing features of society's functioning
3	Theory of Economic Transformations (Evolutionary Theory)	J. Masuda, F. Makhlub	Consciously implemented and reflexive transformations
4	Cycle Theory	D. Kitchen, K. Zhuglyar, K. Marx, S. Kuznets, J. Schumpeter, D. Kondratiev	Repetitive and qualitatively defined transformations
5	Theory of Crises and Disasters	T. Rene, A. Poincaré, A.A. Andronov, M. Tugan-Baranovsky	Adaptive and catastrophic transformations

Source: compiled by the authors.

Transformation of socio-economic systems occurs either as a result of radical changes (revolution) or as a result of internal development (intersystem/evolutionary) (Table 2).

**Table 2.** Characteristic features of socio-economic systems' management

Economic system	Characteristic features
Administrative command system	Policy management of the economy; The possibility of rapid mobilization of economic resources; Lack of motivation of economic entities; The state is the sole owner of productive forces; The inertia of the socio-economic system; Priority development goals are fully established by the state. A large number of counterparties in the market; Production is aimed at the consumer;
Market system	Inequality in income distribution due to business risks; High resource mobility; Cyclical development of markets; The market is self-regulated due to economic laws; Priority task of economic entities is to obtain maximum benefits. State identifies priority areas for regulation;
Dirigisme	The effectiveness of work is assessed by a system of indicators; The state contributes to the development of priority sectors, without limiting growth in others.
Mixed economy	The state assumes the role of social support for vulnerable groups of the population;
Liberalism	The state intervenes in the economy through a credit policy; Priority task of the state is to create conditions for the implementation of economic initiatives. Non-reproducing on its own basis economic system;
Transition economy	The main task is the qualitative transformation of the socio-economic system; Multiple economies.

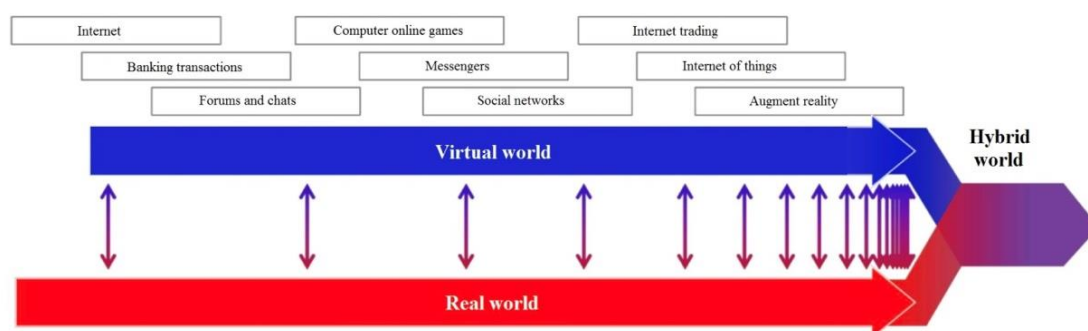
Source: compiled by the authors based on (Zhuravleva, 2014; Kats, & Simonova, 2016; Nikolaev, & Chernaya, 2006; Popov, & Sukharev, 2016; Popov, 2012; Sazonova, 2002; Sukharev, 2011; Webster, 2004; Dzarasov, 2004; Feofanov, 2016, Filipenko, 2002; Hodgson, 2001; Kosten, 2016, Khubiev, 2012).

The society has undergone significant changes over time. Now the process of transformation to the digital society is happening. In this kind of society, the main commodity and driving factor for development are digital information. Therefore, the approaches to business processes' management in the new environment of socio-economic systems are changing. In this type of society, economic relations are digitized and are aimed at reducing the commission costs. Digitalization takes place in the entire surrounding world: business processes, human biomaterials, biomaterials of the surrounding world, human behavioral traits, full digitalization of a person, the transformation of the function of money. The most important feature of transformation changes in business processes is automation (the minimum human influence factor in business processes), the transition to P2P platforms, the maximum reduction in transaction-time factor (reduction in communication time between economic agents). There has always been a need for cognitive communication of people, and ubiquitous digitalization reduces the time of communication between people. We believe that the digital type of society consists of four categories of economies:

1. The digital economy is a type of hybrid economy, in which the dominant feature is digitalization of economic processes and transfer of these processes into a virtual environment.
2. The virtual economy is a type of digital economy in which all economic processes take place in a virtual environment, without contacting the real sector of the economy.
3. Sharing economy is the economy of abundance, in which economic agents own an asset that can be leased.
4. Crypto economy is a field of applied cryptography, which takes into account economic incentives and economic theory.

In selecting the four types of economies, we were guided by the synthetic transformation of behavioral and technological factors, which formed these categories.

In the digital type of society, the main commodity and driving factor for development are digital information (Fig. 3). Economic relations are digitized and are aimed at reducing the commission costs (resource and time).



**Figure 3.** The merger of virtual and real worlds with the formation of the hybrid world (digital economy)  
Source: (Keshelava, 2017).

A special case of the digital economy can be identified as a crypto-economy, which is increasingly gaining popularity in the modern world.

The term “crypto economy” can be misleading since it involves a comparison with the economy as a whole. The economy defines how people and groups of people react to incentives. The invention of cryptocurrency and blockchain technology does not require a new theory of human choice since people have not changed. Crypto economy is not an application of macroeconomic and microeconomic theory for cryptocurrency markets. In crypto economy, the mechanisms used to create economic incentives are built using cryptography and software. The systems being developed are almost always distributed or decentralized.

A distinctive feature of the crypto economy is that it is based on and exists in decentralized peer-to-peer P2P systems. It excludes the control from any third party, such as state, central banks, and governments. The main product of crypto economy is a cryptocurrency based on a public blockchain.

In the modern economy, the issuance of currency violates three fundamental functions of money: a measure of value, a means of accumulation and savings, a medium of circulation (exchange). The basic concept of cryptocurrency restores the principle of “honest money”, while the blockchain technology guarantees transparency, accuracy, and binding social contract to the society. A cryptocurrency built on blockchain technology is more than just a cryptocurrency. It is a protocol for changing the social structure through technical progress. A monetary system based on cryptocurrency restores the primary value of all three functions of money. It simplifies calculation measure, method of saving, and improves the functions of money as an exchange tool. The system of partial bank reservations devalues the savings of producers of material values (money banking multiplier). The cryptocurrency system is based on the fact that money and contract are synthesized and act as one category, so they form a single whole. Failure to fulfill the contract (obligation) automatically entails non-receipt of money, which causes the unity of money and contract. In the transition of social critical mass to blockchain technology and cryptocurrency, the hierarchical order of the modern socio-economic system will be replaced with the principle of “cellular topology”. The absence of depreciating money mechanisms will begin to reflect the principles of social equality, from which the definition of crypto-socialism follows. This may be the next step in socio-economic relations’ development. In a system based on the work of such cryptocurrencies, the layer of money time value theory is either leveled, or disappears (Kosten, 2016).

From the main world religions’ (Christianity, Islam, Judaism) point of view, it is forbidden to use the interest rate because according to the sacred canons, it is a sin. A financial system that is based on religious sin is a dubious source of public welfare.

Thus, the system of monetary and contractual relations is much fairer than the existing one, in which social injustice dominates through the mechanism of devaluation and money banking multiplier. The society will move away from the system based on debt obligations to the system of a completely new generation of programmable monetary relations (Kosten, 2016).

## Conclusion

Today socio-economic systems’ transformation processes management in the conditions of digitalization and widespread change in business processes is a pressing challenge. New business models that take into account digitalization will discredit modern approaches to management and business. The need for cognitive communication between people has always existed, and ubiquitous digitalization reduces the time of communication between people and consumer behavior, which allows highlighting the following types of economies: digital economy, virtual economy, sharing economy, crypto economy.

Further research should be directed at studying the effects of socio-economic systems’ transition to the digital form of management, as well as sharing economy during the downturn of economic cycles and the place of cryptoeconomics in the digital economy.

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