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Abstract

Modern economic development of the world community to make sure that all the changes and transformations can be resolved under the influence of the institutional environment. Investigation of the process of connectedness, which leads to the transformation of the capital in the form of a virtual existence and defines the main factors influencing its formation. A list of these factors is changing rapidly, but the driving factor is the uncertainty of the market situation, which could inflict the threat risk of loss of capital. In this regard, the base part of a flexible enterprise management tool on the market of information services can be a mechanism of risk assessment and study of performance criteria investment decisions to create the conditions to access information through enhanced Internet - space. Development and use of risk assessment techniques in conditions of transparency prevents deformation of the economic space, and to stimulate the accumulation of virtual and real capital.

Keywords

Introduction

Institutional transformation services

Problems of society in times of large-scale institutional changes transformations and reforms exacerbate the need for a conceptual study model of institutional design. Russia, which is in a state of instability, uncertainty of economic development and modernization in all spheres of activity requires increased attention on the part of institutional reforms, as the country is actively involved in the world economic space information services.

Institutional transformation is needed in all areas of development. Since the modern competition for leadership among all countries greatly exacerbated. It's no secret that the degree of economic development of the country depends on the investment attractiveness and capital injections into the country, both from foreign and domestic investors.

There is no doubt that the movement of capital into the country in these tough conditions determines the state of its stability and growth. Creating an enabling environment and the formation of sustainable economic development enhances the concentration of capital. It is therefore necessary to the creation of artificial institutions, and their appearance is possible only when the institutional design.

The institutional design of capital in Russia requires a long and careful analysis and implementation. The better model is projected development of the capital market, the more effective is the process of creation and sustainable economic growth of the country compared with other countries.

Currently, the need for the design of economic institutions is an important aspect of modern politics in relation to the economy in order to create and strengthen the country's economic growth, by improving the ownership structure of the banking system, exchange and off-exchange structures, as well as an attractive investment climate.

The institutional design of the capital should take place in the directions: by households and economic agents in the face of private investors, from companies, accumulating a huge part of the assets and the state as the very last resort and subject to the most effective exposure to market changes.

Internalization housekeeper

Of course, in terms of increasing connectedness process, the direction of development and improvement of institutions becomes more important. In this regard, it is necessary to elaborate on the basic institutions that have a significant impact on the development of the capital market.

The most common informal institutions can be considered a Self-regulatory organization, institutional investors. Note that formal and informal institutions are closely linked. The activity of one is intertwined with the activities of others but the differences in their work principle. In the event that counterparties fulfill the conditions of the concluded contract because it is required by law, while noncompliance with the conditions they find out the relationship in bankruptcy court considered the formal rules of the institutions that if they are guided by the rule that you cannot "throw" a business partner, and the execution of transactions backed by guarantees of structures for their support force.

Institutions arise and exist only thanks to the fact that they are forming the conditions of the processes of interaction of people that make up the life of society. In turn, reduce inappropriate institutions to organizational entities that are emerging on the need to carry out economic activities most effective way. Therefore, the institutional structure the numerous institutions and organizations created in the community's economic, social, political and other spheres, and the relationship developing between them [1].

Note that for efficiency savings and capital flows need to be clearly model and organize the work of all the institutions in order to improve significantly.

Because capital in modern conditions can be transformed and receive not only the material material form, but immateriality, with only the title of the property, it is necessary to introduce new forms of formal and informal institutions, which could in the right direction to redeploy capital in a virtual environment (information services).

In recent years, it is gaining strength and power development of virtual capital. Virtual capital spreading the virtual electronic networks which increases the number of institutional owners. Naturally, the process of forming a virtual capital cannot do

without a new institutional environment a virtual network the Internet.

Internet itself is mega-institute that combines a set of formal and informal institutions. Network Wide Web serves as the formal institutions, which complied with the implementation of legal rights with respect to the rights of the owner of the information. On the basis of regulations that are not prohibited by Russian law, take into account the rules of dissemination of information, and conducting some sort of business relationship. Accordingly, the movement of capital, functioning in the sphere of information services (virtual network) requires a serious institutional design, in order to identify the principal risks of consumers and investors.

Thus, the aim of the article is the scientific basis of the theoretical foundations of the transformation of the economic capital in the space under the influence of information technology as the backbone element of the post-industrial economy, and to develop practical recommendations that reduce investment risk subject's information services sector.

The statement and proof of working hypotheses were made on the basis of general scientific and specific methods.

The emergence and taking into account risks to the information services market

This article describes the features of the effect of connectedness on the pairing process on traditional and electronic markets, which leads to the transformation of the capital, as well as expanded features of the development of the market of information services. It is proved that the virtual Internet, submitted through the channels of modern information technology, enhances the interaction of various business organizations and enterprises engaged in the service industry, serving as the impetus for the innovative development of the region, and a separate state as a whole.

The concept study, the authors used the fundamental conceptual achievements of the theory of globalization, the principles of postindustrial economy, information economy, on the basis of which identified mechanisms of virtual capital market. Market research information services in the transformation of virtual capital allowed to prove the existence of market information services to indirect effects, manifested in the increasing demand for real market information services to increase their mass production, and direct (increase in the number of consumers and networking between them increases consumer surplus) effects.

Study of issues related to the minimization of risks in an uncertain external environment contributed to the formation of the methodical approach to risk assessment and decision-making under conditions of non-transparency of information flows in the market of information services with the aim to optimize the program of investment activities of market participants, and the formation of public policies aimed at structural transformation information services sector of the Russian economy [2].

Literature Review

Economy from its connectedness, studied by many Russian and foreign scientists. For example, the emergence of networks and online communities is reflected in the model A. Marshala sectional social preconditions and the informal economy. The writings of the author [3-8] emphasis on the instability of social and economic structures, so special attention is paid to the computerization of society and the development of economic globalization processes (a combination of micro and macroeconomics). Faaeq [9] focus on the creation of new knowledge and sociological aspects, research and Yakovlevov and Parinova are networked economy as

computerization, analog telecommunications and e-economy (electronic business and commerce, where the calculations produced electronic money). Authors proposed a classification of network economy [10-12]:

a. Internal oriented market prices and information flows;

b. Stable, forming a flexible value chain based on mediation, and the achievement of additional income through the development of a distribution network and ensuring a reliable supply of essential goods and services;

c. Dynamically adapt to the market environment with the diversification of activities and represent their interests with their independent economic agents in different markets.

It should be noted that the works of social networks are presented as a special social capital [13-18]. Zagidullina [19,20] studied the basic characteristics of the network organization, and investigated economic interaction in terms of connectedness.

Modern conditions of economic life have had a significant influence on the formation of the theory of capital. Since the beginning of the XX century, the capital began to acquire great power and strength that will ensure the stability and development of the state.

Economy from its setevizatsii studied by many scientists. For example, the works of authors [5,21,22] emphasis on the instability of social and economic structures, so special attention is given to the informatization of society and development of the processes of economic globalization (a combination of micro and macroeconomics).

The rapid development of production in terms of innovation, the desire to take a leading position in the creation of new developments have pushed the company to attract investment from outside [2]. The main impetus for change and transformation of economic relations was the active introduction and use of information and communication technologies. These economic changes have contributed to the emergence and consolidation of a massive local, national and international networks, so that was formed by a single Internet space. The current stage of development of information technologies associated with the breakthrough in the scientific technological sphere, telecommunications revolution and the transition of all countries about the same system of political governance.

The Internet is becoming an integral part of the political and economic life of the country, and the flow of information disseminated through a virtual network, contribute to the modernization of industrial activity and the accumulation of capital market entities information services.

At the same time, the process of connectedness in Russia, contributed to the formation of virtual capital, which currently is in its formative stages and is far from developed European countries, which suggests the need for state support to the further development of the Internet and the development of territories space.

Use of information is one of the main sources of risk reduction in business activity [23].

In these circumstances, the problem is becoming urgent given the level of risk for potential investors in the revitalization of the virtual capital under the influence of information flows and the need to amend the administrative decisions. As a result, there is a need of renovation of existing methodical approach to the assessment of risks to minimize them and recommendations for performance criteria justifying investment decisions.

Model between electronic and traditional services market

Information Box and advertising placed on the Internet, reinforces the development of the traditional market, attracting customers and clients to visit the appropriate service facilities. It should be noted at the same time increasing the active electronic market through advertising and visiting the shops, the intensification of the process of sale and the exchange of information base. However, in this and in another case, the situation is favorable for business / service organizations by reducing transaction costs, patterns of economic growth and capital increase (Figure 1).

Model results interfacing electronic and traditional market of goods and services underscores the emergence of new specific socioeconomic phenomena relating to the essential aspects of social life and relationships, as well as certain areas of human activity.

Internet and developing in them the information and network economy, is a global system with complex organized layered structure of relationships among economic actors buyers and sellers of goods and services, which allows you to combine the processes of horizontal and vertical levels of the economy, is actively using methods of knowledge management and the nature of information electron sphere.

Applications of the model transformation of the traditional market of services, taking into account the risks

The new form of organization of electronic and traditional markets in the service sector, on the one hand, complicates the economic processes, on the other hand, simplifies and accelerates the interaction between economic agents. Network interaction becomes the dominant character, emphasizing the forward productive development of the socio-economic transformation of the structure areas of the modern economy. We represent the economic mechanism of the interaction of all participants in the electronic market (Figure 2).

Formation of the economic mechanism depends largely on the spread of personal computers in enterprises/organizations and consumers, requiring them to specific vocational training, skilled expertise knowledge on the use of existing capabilities of the Internet, describing the features of consumer behavior. Many an important role in this mechanism plays a branching and reliability of the server operating system of distribution in conjunction with the individual ability to provide Internet and so on.

The needs of modern society formed the need for the introduction of the network economy based on information and communication technologies, both in business and in everyday life. It was based on "the needs and the need to" create an area of innovation and interfacing areas of electronic and traditional service market (Figure 2).

Becoming a knowledge-based economy is reflected in the transformation of the essence of the traditional quartet of factors of production, which included the greatest changes affected the capital [11]. The ability of capital to flow rapidly between the national segments of the global market and transform into a variety of fictitious instruments was a prerequisite for the emergence of new forms of organization of the fictitious system. This contributed to the fact that the scope of information services has become an effective mechanism of state regulation of the economy.

Growth in the number of users will inevitably lead to increased demand for goods and services, and as a consequence-scale virtual capital market and growth of different

kinds of risks.

Intensive spread of local and global communication networks creates the preconditions for the formation of cross-border information exchange and the transition to a fundamentally new stage of development of human civilization-the information economy, providing economic connectedness of the space, the transformation of information and knowledge is one of the strategic resources to reduce risks of economic activity. Therefore, it becomes an actual assessment of risk levels of market participants information services, and an adjustment on the basis of this assessment of investment decisions.

Thus, the main problem associated with minimizing the risk situations becomes a mechanism for evaluation as a result of the adoption of inefficient management decisions that may affect the accumulation of virtual capital.

Consider the main risks arising from the subjects of the market of information services in the conditions of connectedness.

Business entities operating in conditions of uncertainty (the incomplete information about the state of the housing market, the foreign exchange market and so on).

This factor leads to the possibility of deviation of the actual results of business entities from the target. This deviation is characterized by the categories of economic risk.

The risk of investment sources the probability of loss of the funds intended for investment due to the occurrence of the following adverse events:

1. Depreciation due to inflation,

2. The formation of the unfavorable market conjuncture,

3. Bankruptcy of financial firms or partial exercise of (or failure) of its financial obligations,

4. Adverse offensive, rapid or unexpected events or situations (fire, flood, criminal events, natural disasters, technological accidents and man-made disasters).

5. The sharp drop in financial risk (the collapse of the ruble).

In times of instability, high inflation, and so on. Investors' risks increase, so the need for the development of various forms and methods of accounting investment risks becoming an urgent problem. According to the analysis of numerous studies and with the help of the expert survey, the basic types of risks in the various sectors of the economy, and highlights the most significant risks in terms of economic performance, depending on the degree of certainty/transparency/ completeness of the information. The values of the rate of change of risk in the service sector in terms connectedness (opinion poll findings) are presented in Table 1.

Prior to the global connectedness in the acceptable risk (risk $Y \leq 0.3$) the risk is not observed; in the middle of the value of risk (risk level of $0.31 \leq Y \leq 0.7$) are the following: political, socio-economic, low solvency of the population, production, reduction of financial stability, bankruptcy, investment, inflation, interest rate, currency, deposit, credit, tax, structural, crime, low-skilled personnel, administrative errors, changes in the legal framework; in an unacceptably high risk (the risk level of $0.71 \leq Y \leq 1$) are the risks of natural disasters and accidents.

According to the results of expert surveys/assessments as a result of connectedness identified a number of positive changes that are a direct result of the implementation in various sectors of the economy of the Internet, electronic payment systems, e-

government, and so on, which allowed to consider a model portfolio investor, subject to the following assumptions:

1. An investor acting under conditions of uncertainty, due to the opacity of the information in the information services market, resulting in a loss of yield. The way to overcome them is the account of the risks;

2. Taking the *i-th* decision to invest in the project/company of a certain type in a certain location, the investor expects to earn revenue of q_{ij} the implementation of the *j-th* the situation in the market of information services.

The Matrix:

$G = (g_{ij})$ i = 1, 2,.........,n

j = 1, 2,.........,m

It is the matrix of the relative income of the investor.

With the known situation j by investors decide to maximizing its income.

$q_j = \max q_{ij}$

$1 \leq j \leq m$

Taking the i-th decision under uncertainty, the investor receives income other than the maximum, which is expressed as the risk r_{ij} *i-th* solution:

$r_{ij} = q_j \text{-} q_{ij}$

The matrix of the relative income of the investor G in the conditions of uncertainty of information) will be:

$$G = \begin{pmatrix} 1,0 & 0,75 & 0,75 & 0,65 \\ 0,94 & 1,0 & 0,89 & 0,72 \\ 0,94 & 0,88 & 1,0 & 0,81 \\ 1,0 & 0,86 & 0,79 & 0,93 \end{pmatrix}$$

Where $g_{ij} = \dfrac{q_{ij}}{q_{ij\,max}}$,

q_{ij}– the amount of income investors using *i - fifth* strategy for j state of the environment;

$q_{ij\,max}$– the maximum amount of income investors using *i - fifth* strategy.

Suppose that in conditions of uncertainty the probability distribution of the states of the external environment will

$$P = (\frac{1}{4};\frac{1}{4};\frac{1}{4};\frac{1}{4})$$

$$M(Q_1)=1,5 , M(Q_2)=1,2$$

$$M(Q_3)=1,35 , M(Q_4)=1,5$$

$$M(Q_1^2)= 2,38$$

$$M(Q_2^2)=1{,}49$$

$$M(Q_3^2)=1{,}86$$

$$M(Q_4^2)=2{,}3$$

$$D(Q_1)=2{,}38-1{,}5^2=0{,}13$$

$$\sigma_1=\sqrt{D(Q_1)}=0{,}36$$

$$\sigma_2=0{,}22$$

$$D(Q_2)=1{,}49-1{,}44=0{,}05$$

$$D(Q_3)=1{,}86-1{,}83=0{,}03$$

$$\sigma_3=0{,}17$$

$$D(Q_4)=2{,}3-2{,}25=0{,}05$$

$$\sigma_4=0{,}22$$

We construct a two-dimensional plane on the point of describing the set of solutions $\{\sigma_i;\ M(Q_i)\}$

(1) (0,36; 1,5)

(2) (0,22; 1,2)

(3) (0,17; 1,35)

(4) (0,22; 1,5)

Matrix Income Investors G* using the Internet-space electronic payments to help improve the efficiency of information by generating information streams in real time, will have the form:

$$G^*=\begin{pmatrix}1{,}0 & 0{,}85 & 0{,}85 & 0{,}75 \\ 0{,}95 & 1{,}0 & 0{,}9 & 0{,}79 \\ 0{,}89 & 0{,}94 & 1{,}0 & 0{,}94 \\ 0{,}63 & 0{,}74 & 0{,}9 & 1{,}0\end{pmatrix}$$

In the context of connectedness becomes more significant factor in increasing the certainty of information, which increases the relative income of the investment project implementation. At the same time, the probability of the state of the environment reflects an increase in the accuracy of information on upcoming events or changes in the external environment. The probability distribution of the states of the external environment will be offset in the direction of increasing the probability of the most anticipated events (event group). For example, access to correct information about the occurrence of adverse events will give the probability distribution of the events of the following form (Table 2).

Results

Increasing transparency (availability) of information flows (obtaining timely information about upcoming adverse event) will allow the investor to increase profitability in different variants of occurrence of adverse events. The graph (Figure 3) that the solutions 1 and 2 can be discarded as to ensure a minimum income. The choice of strategy 3 and 4, the investor gives almost the same relative income. In general, increasing the certainty of certain environmental conditions (increasing the transparency of the information environment with 0% to 40%) increases the income of the investor and reduces the risk/ deviation from its expected value by 14% (from 7.9% to 9%).

In our study, for the formation of risk assessment in various sectors of the expert survey method was used, by which have been allocated the most significant risks in terms of economic performance, depending on the degree of certainty/transparency/completeness of the information. According to the results of expert surveys/assessments as a result of connectedness identified a number of positive changes that are a direct result of the implementation in various sectors of the Internet economy. Generalizing the findings to justify the performance criteria decision-making had been calculated on the basis of the mathematical theory of management decisions and the choice of construction of the matrix of relative income. The analysis led to the conclusion that in the conditions of connectedness and access to information, management decisions can be corrected to get the most revenue, while reducing the risk of threats.

This method makes a significant contribution to the analysis of investment attractiveness of the decisions of investors may contribute to the effective interaction of real and fictitious sectors of the economy, and will prevent the distortion of economic space, as will improve the predictability of economic processes at the micro and macro levels.

Conclusion

In the context of public access to information, information services market actors are able to more quickly and efficiently respond to changes in both external (institutional and market) and internal environment, which is conducive to the adoption of adequate management decisions in relation to the accumulation of capital. Investigation of the process of connectedness, which leads to the transformation of the capital in the form of a virtual existence and defines the main factors influencing its formation. A list of these factors is changing rapidly, but the driving factor is the uncertainty of the market situation, which could inflict the threat risk of loss of capital. In this regard, the base part of the tool flexible enterprise management information services market is becoming risk-assessment study and performance criteria investment decisions to create the conditions to access information through enhanced Internet-space.

Development and use of risk assessment techniques in conditions of transparency prevents deformation of the economic space, and to stimulate the accumulation of virtual and real capital. Thus, the proposed method for estimating the risks of investors in the implementation of connectedness necessitates knowledge of the specifics of the development of post-industrial society, the way to minimize the risks affecting the formation of capital, as well as effective measures to create favorable conditions for the investment potential of the active introduction of the Internet-space.

Thus, the practical use of the above modeling tool makes a significant contribution to the analysis of investment attractiveness of the information services sector.

Tables at a glance

Table 1

Table 2

Figures at a glance
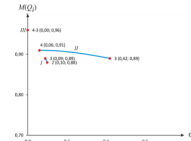
Figure 1

Figure 2

Figure 3

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