

Modern scientific research and their practical application

Published by:

Kupriyenko Sergiy Vasilyovich on Project SWorld

With the support of:

**State research and development institute of the merchant
marine of Ukraine**

Odessa National Maritime University

Ukrainian National Academy of Railway Transport

Volume J11201

February 2012



SWorld /*Scientific World*/ - is a modern on-line project, acting in the name of science to achieve the high goal “international integration of research” (conferences, workshops, electronic journals, publishing support for academics)

Please use the following format to cite material from this book (*italics indicate the fields to change to your data*):

Author(s), "Title of Paper," in Modern scientific research and their practical application, edited by Alexandr G. Shibaev, Sergiy V. Kuprienko, Alexandra D. Fedorova. Vol. 11201. (Kupriyenko Sergiy Vasilyovich, Odessa, 2012) Article CID Number.

This volume contains research papers of scientists in the field of Economy.

Editorial board:

Alexandr G. Shibaev – *Doctor of Technical Sciences, Prof.*

Alexandr S. Lesnik – *Ph.D., director of State research and development institute of the merchant marine of Ukraine*

Alexandr V. Yatsenko – *associate professor, rector of the Institute for Entrepreneurship and morehozyaystva*

Sergiy M. Goncharuk – *Doctor of Technical Sciences, prof., Member of the Russian Academy of Transport and the International Informatization Academy, Honored Worker of Transport of Russia*

Denis V. Lomotko – *Doctor of Technical Sciences, Vice-Rector of the Ukrainian State Academy of Railway Transport, Corr. Transport Academy of Ukraine*

Inna A. Lapkina – *Doctor of Economic Sciences, Professor.*

Sergiy I. Rylov – *Ph.D. in Economics, Professor.*

Julia L. Kantarovich – *Ph.D. in art history science*

Elena V. Kirillova – *PhD, associate professor*

Petrov I - *PhD, associate professor.*

Demidova V - *Ph.D in Pedagogical Sciences*

Sergiy V. Kuprienko – *Ph.D*

Alexandra D. Fedorova

Published by:

Kupriyenko Sergiy Vasilyovich
on Project SWorld

P.O. Box 38, Odessa, 65001 Ukraine

Telephone: +380667901205

e-mail: orgcom@sworld.com.ua

site: www.sworld.com.ua

The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Copyright

© Authors, 2012

© Publishing Kupriyenko Sergiy Vasilyovich, 2012

Paper Numbering: Papers are published as they are submitted and meet publication criteria. A unique, consistent, permanent citation identifier (CID) number is assigned to each article at the time of the first publication.

CONTENTS**Innovative approach to the development of enterprises, industry, complexes**

J11201-019	INNOVATIVE PROCESS IN RUSSIA	Kameneva N.A.
J11201-042	FORMATION QUALITY SYSTEMS IN THE HOTEL INDUSTRY	S. Melnichenko, M. Bosovska, K. Yesipova
J11201-049	MODERN INNOVATIVE APPROACHES TO DEVELOPMENT OF AGRICULTURE AS A RETROSPECTIVE OF TRADITIONS OF RUSSIAN LAND MANAGEMENT	Volgireva G. P.
J11201-063	INNOVATIVE APPROACH TO DEVELOPMENT OF HOTEL CHAINS	T.O. Martsin, T V. Burak, O.S. Lifirenko
J11201-097	MECHANISMS OF INVESTING INNOVATIVE PROJECTS OF ENTERPRISES	Svitlana Lukash
J11201-099	PROSPECTS OF DEVELOPMENT OF WASTEPROCESSING INDUSTRY	Peresadko G.A., Gromyko N.G., Aleksievets I.L.

Effective economy of the contemporary world

J11201-014	INTERNAL FIRM INSTITUTIONS OF OPPORTUNISTIC BEHAVIOR	Kondratieva T.V.
J11201-016	SYSTEMS AND RESOURCE APPROACHES IN THE INNOVATION MANAGEMENT	Berdina M.Y., Torosyan E.K.
J11201-027	THE CONTEMPORARY MIGRATION^ THE PROBLEM OF RELATION OF SOCIAL AND ECONOMIC	Metlev I. S.
J11201-028	ECONOMIC ANALYSIS OF TERRORISM AS A COMPLEX SOCIAL AND POLITICAL PHENOMENON	Metlev S.E.
J11201-044	ECONOMIC REFORMS OF RUSSIA AGAINST CORRUPTION	Yerzyn A.H.
J11201-052	INTEGRATION OF IN-COUNTRY REGIONS AS LOCAL FORMATIONS INTO THE GLOBAL ECONOMIC SYSTEM: THEORETICAL AND METHODOLOGICAL BASIS	O.N. Voronkova
J11201-137	MOTIVATION AND STIMULATION OF INNOVATIVE ACTIVITY IN STATE HIGHER EDUCATIONAL INSTITUTIONS OF THE RUSSIAN FEDERATION	Shakhovskaya L.S. Potashova I.E.

Accounting and reporting by enterprises: contemporary approaches

J11201-103	ASSESSMENT AND ACCOUNTING OPERATIONS WITH CONVERTIBLE BONDS : THE PRESENT STATE AND PROSPECTS OF DEVELOPMENT	Perevozova I.V., Rudeychuk S. V.
------------	--	----------------------------------

centers, thus to its form and quality specific requirements are put forward. while ignoring that recyclables will not be accepted and transported to landfills.

In Ukraine since 1984 four waste incineration plants have been built - in Kharkiv, Dnepropetrovsk, Sevastopol, Odessa. Nowadays, only two are working - in Kiev and Dnepropetrovsk.

Despite the existence of rules, the waste disposal in Ukraine, in many cases is carried out at landfills and dumps, which are placed wrong, in particular with regard to hydrological conditions and distance to water objects, wells and aquifers.

That's why, most landfills and dumps are a serious threat to precious water resources. Moreover, the most of landfills and dumps, operate 20-40 years, not designed properly, concerning drainage of surface water collection and treatment of filtrate and treatment polygon gas.

CID:J11201-014

UDK 330.341.4

Kondratieva T.V.

INTERNAL FIRM INSTITUTIONS OF OPPORTUNISTIC BEHAVIOR

Luhansk Taras Shevchenko National University

Introduction

The domestic institutional market is characterized by difficulties in applying the growing number of formal rules. The result is a change of formal institutions to informal institutions in the activities of firms. Special forms of these rules are internal firm institutions of opportunistic behavior. High level of the shadow economy of Ukraine, saving non-economic (power) control methods, traditional priorities of personal factors in economic relations, the weakness of institutional system – all these create a hidden readiness of members of firms to operate in the shadow intracompany field, reducing the effectiveness of the company as a whole.

Nature, formation, evolution and consequences of informal institutions are investigated actively in papers devoted to institutional issues [1]. The essence of anti-

institutes that restore «status quo» or restrict the scope of a non-shady institute is also considered within the framework of the institutional economics [2]. Authors studied the phenomenon of opportunism in the post-Soviet economic system [3]. Scientific apparatus of the game theory enables to create intracompany cooperation in an official and shadowy framework [4]. In other words, there is opportunity and necessity of further study of intracompany opportunistic institutionalization and analysis of its effects on economic behavior of firms.

1. The essence of internal firm institutions of opportunistic behavior

To determine nature of intracompany opportunistic (shadow) institutionalization we need to find out the criteria for referring of an institution to the internal firm institutions of opportunistic behavior.

The first criterion is informal nature, i.e. opportunistic rules of conduct within the company are not documented but fixed in the form of branded customs, traditions and codes of behavior.

The second, these institutions have opportunistic nature or contradict to the interests of the company. According to O. Williamson, opportunism is defined as "self-interest seeking with guile" [5, p. 97]. The shadow institute is a form of existence of the intracompany system opportunism. Unlike anti-institutes [2, p. 63] that restore «status quo» or restrict the scope of formal institutions, the element of the institutional competition is not obligatory in this case. There is opportunism not to the formal institutions but to the goals of an organization. The form of manifestation of opportunistic nature of shadow institutions is receiving an institutional rent by members of the firm – they get personal benefits from the institute.

The third feature of the opportunistic intracompany institutionalization is hiding transactions or their essential features from intracompany control.

The fourth feature of these institutions is their local nature, regulation of interactions within the activity of one firm.

Thus, internal firm institutions of opportunistic behavior can be defined as informal conduct rules that have local nature, govern interactions within the activity

of one firm; and they are a hidden form of existence of intracompany opportunism and of obtaining an individual institutional rent by actors.

Internal firm institutions of opportunistic behavior are the rules in which the guarantor of the norm coincides with its addressee. They are capable of evolutionary development, so they can be submitted in equilibrium and non-equilibrium state. Shadow institutionalization may involve every kind of economic relations depending on the scope, area, management level, size of dissemination, maturity stages, and the hierarchy.

The variety of internal firm institutions of opportunistic behavior can be aggregated to two groups:

rules governing the behavior of agents of the firm in illegal transactions;

using of shadow rules in legal transactions (including obtaining personal benefits and misuse of formal institutions).

Prohibited transactions are realized as fraud of firm's agents. In the broadest sense, fraud is an intentional lie or abuse of confidence in order to receive any benefits. Thus, a high level of trust between agents of a company may be not only a factor of adaptive economic behavior, allowing the firm to respond to market signals quickly and adequately. Breach of trust becomes more common in conditions of development of market relations and economic virtualization. Concerning a particular firm fraud may take the following forms:

misappropriation or theft by an agent of the company (appropriation of property or funds of the company directly by employees or by and with the participation of others);

fraud of central agents (manipulation of financial statements);

fraud with investments (realization of investment projects that have no real value);

fraud by suppliers (overstating the number of products supplied, supply of defective goods or non-delivery of goods);

fraud by customers or clients (non-payment for delivered goods, receiving payments for unfulfilled work).

Study of the fraud problem has shown that firms suffer greater damage from its employees than from customers: in the retail trade store thefts account for 30%, and fraud by staff - 70% of all cases. In the banking sector 95% of the amounts losses produced by dishonesty of staff and only 5% - due to the actions of clients. It emphasizes that the losses from fraud is growing in difficult economic periods, in the period of growth, financial crisis or merging of companies, as well as during making risky projects - that is, during the greatest diversification of economic behavior [6].

Economic spying is the most difficult and dangerous form of intracompany fraud. It does not prejudice such obvious damage to national economies, like other shady institutions. Negative consequences of economic spying practice have more complicated and prolonged nature, because companies that are succeed in the armaments industry, high technology and manufacturing - such as pharmaceutical companies, chemical, food, or major industrial giants which form the basis of national economies - are the most sensitive in this case. Economic spying is collection of economic information in order to cause harm or advance in economic activity [7]. Theft of confidential information, technologies, and production methods causes damage to the interests of a company - from disruption of a particular contract, reduction of interest income from operations, complication of fulfilling of a separate agreement to loss of goodwill, conflicts with state authorities, depending on the criminal structures. The firm that performs economic espionage also has some loss; as in most countries these steps are criminal, therefore they require more resources and time (high opportunity cost). In addition, the company risks being liable to legal liability and the firm may suffer reputation risks.

Vandalism as a prohibited transaction is one of the forms of destructive behavior of firm agents, deliberate and senseless destruction of tangible and intangible values. According to S. Cohen's typology, there are six types of vandalism:

vandalism as a way to purchase (a kind of theft);

tactical vandalism (destruction used to achieve other objectives - for example, whole shipments are destroyed to prevent falling prices);

ideological vandalism, directed against the government, formal institutions, any social or formal groups;

vandalism as revenge in response to insult;

vandalism as a game - an opportunity to raise status inside the group by display of force;

persistent vandalism - malicious actions that have a personal basis for a relatively non-specific object [8].

One of the contemporary manifestations of intracompany vandalism is computer sabotage – «introduction, change, damage or destruction of computer data or programs, and intervention in a computer system with intent to interfere with functioning of a computer or telecommunications system» [9].

Getting personal benefit through using of shadow rules of non-shadow transactions appears in the form of bribery mainly. Bribery is receiving property or provision of material goods by an official in any way and any form for the implementation (or failure) of acts in favor of the briber within the jurisdiction of this officer [10].

“A kickback” is the most common form of bribery in activity of companies. According to current studies, about one third of transactions in post-Soviet countries are under kickback schemes, while their average size is about 5-10% of the transaction. The largest known kickback operation took place in Italy in 2004. Financial Guard took to court over 4400 physicians and 273 employees of the British pharmaceutical giant «GlaxoSmithKline» for passing kickback to the amount of 228 million euros [11].

The shadow nature of these procedures causes opportunity only to suggest their impact on the amount and dynamics of gross national product. The most "dangerous kickback" industries are the market of information technology, pharmaceuticals, insurance business, and marketing. We can say that the degree of destruction of the Ukrainian market by this shadowy institution is medium - agents of the company try to keep balance between the interests of the company and personal gain. Principals know and agree with this situation tacitly, and try to limit its growth. Indirect signs of

the kickback institute are a hardly transparent policy of companies in corporate discounts and relatively low salaries of firm agents that provides "self-stimulation". However, the current institutional dynamics shifts the domestic market to severe forms of affection when, instead of market goods and services there is a "kickback market", which is the main tool for promotion and the essential part of the price, and special companies are created to gain the shadow bonuses by agents.

The need for dynamic innovative development of Ukrainian economy and its globalization actualize the problem of studying kickback institutes. The following definition is the most complete: "A kickback is any undeclared fee of an employee of the commercial firm or an administrative authority to any third agent for making profitable economic or administrative decisions under his official powers [11]. When such an institute exists within the company, a kickback receiver (firm agent) doesn't choose the most efficient variant of economic behavior in the existing market conditions, and adheres to the principle of maximizing personal gain. On the one hand, we can say that in some cases kickback reduces time of conclusion of a contract and transaction costs. However, except for distortion of parameters of transaction and market situation, there is a danger to manipulate (blackmail) one of the participants.

Misuse of institutions takes place when the motives and the nature of the appeal to them do not meet the purpose and meaning of formal institutions, thus their ability to perform its main function is lost. Researchers have identified a typology of such phenomena.

The first type - exploitation of information asymmetry - takes place when "economic agents pretend that they adhere to the rules of institutions, but in fact they violate these rules in their own interests, using the fact that such violations are unpunished" [12, p. 29]. Reliable disclosure of implicit information - an important feature of institutions - is lost in this case, and the uncertainty of firm behavior increases. In addition, the credibility of the institute decreases, and the distortion of information perception increases. Of course, rationality and, therefore, adaptability of the economic behavior of firms decrease.

Another variant of misuse of institutions is manipulating them. Imperfection of formal fixing of institutes can allow agents to act in contradiction with its spirit and intent, following them formally [12, p. 31]. For example, the institute of internal reports should perform a communication function within the company. But it may be used as a tool for personal career fight, distorting information about the activities of other firm's agents.

If institutions hide a shadow activity, we are talking about using them as a cover. One of the most common examples of such misuse is the institute of non-fixed working hours. It can be used for rapid and adequate response to changes in the firm's environment as well as for reduction of the intensity of a working day.

The fourth type of such phenomena is the subordination of the institutions, when an institute is "captured" by a group of agents for using it in their own interests at the expense of the general interests of a firm. In this case, rationality of a firm's behavior is sacrificed to rationality of individual behavior and to opportunism of agents.

2. The reasons and stages of intracompany shadow institutionalization

The causes of intracompany institutions of opportunistic behavior can be combined into the following groups:

market causes (environmental parameters that affect the institutional structure of a firm - ambiguity and variability of environment create the prerequisites for the formation of institutional deformation);

external institutional reasons (institutional structure of the economy as a whole, the experience of enterprise's markets, the pressure of behavioral patterns of other firms);

internal behavior causes are associated with the mental peculiarities, social, ethical, psychological and motivational characteristics of employees (the traditional priority of personal factors in economic relations, priority of short-term goals over long term objectives);

internal institutional reasons - the effectiveness of rules that regulate repeated economic interactions (low quality, high level of opportunism, high transaction costs

of using formal institutions, the degree of institutionalization of corporate interaction).

The analysis of the internal causes of informal institutionalization is an object of a special interest. The current studies identify the dependence of institutional quality and qualities of human and social capital in this way:

$$QI = \frac{h \cdot s}{g^2}, \quad (1)$$

where QI - institutional quality,

h - index of human capital,

s - index of social capital,

g – performance indicators of stakeholders [13, p. 58].

Stakeholders are a set of agents, characterized by coincidence of economic interests and affected by selective incentives for production of a common collective good [13]. Social capital is defined as a source of economic growth that occurs through the formation of specific local institutional environment [14, p. 33].

As noted, the formation of shadow institutions is the result of low quality of formal institutions. So we can say that the cause of shadow institutionalization is low indexes of human and social capital. Researchers emphasize that "the presence of persistent and rooted groups with special interests makes impossible even the potential to create or to implement effective market (economic) institutions" [13].

Among the social causes of institutional deformation are defined:

necessity of institutional changes and lack of mechanisms for their implementation (institutional pits);

breach of interdependent relationship between institutions (gaps);

lack of appropriate institutional structures (voids);

breach of a number of interrelated institutional units (collapses);

existence of the relationship between institutions, which leads to permanent narrowing and fading of processes that these institutions should provide (loops) [4, p. 60].

To understand the essence of intracompany institutions of opportunistic behavior we should consider the process of their formation and selection, which consists of several stages (fig. 1).

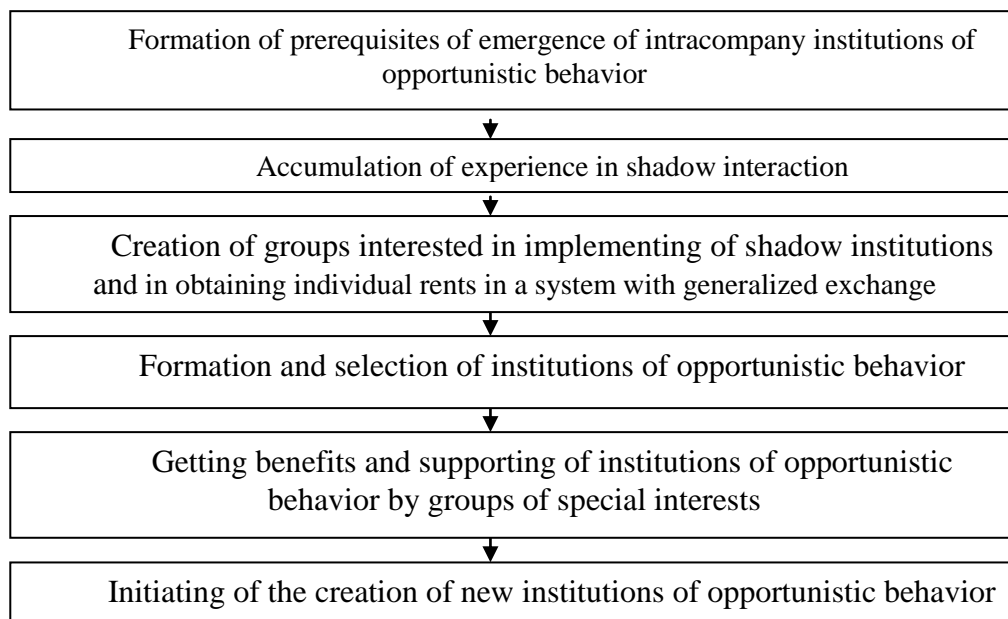


Fig. 1. Stages of intracompany shadow institutionalization

The first stage includes formation of prerequisites of emergence of intracompany institutions of opportunistic behavior. These internal and external prerequisites are considered above. The second stage is the accumulation of successful experience of solving economic problems in a shadow way, whereby over time the experience becomes the starting point for solving the same problems and acquires the nature of rules. The third stage: a rule of interaction between employees of a company becomes an institute when a large number of individuals involved in socio-economic relations follow it. Therefore, formation of stakeholders is a factor in creating and supporting of institutes of opportunistic behavior. According to M. Olson, only stakeholders' activity often leads to introduction of effective institutions [13]. The next stage is the selection of institutions depending on the structure of stakeholders which implement

and support their favorable rules. It is important to consider evolutionary nature of emergence and development of institutions of opportunistic behavior. If a set and quality of institutions after random or minor events are relatively low, the system will reproduce these inefficient states multiplicatively (the sixth stage) until a new situation arises and contributes to the evolution ("bottle neck effect") [13, p. 62].

The consequences of existence of institutions of intracompany opportunistic behavior are mixed. It is obvious, that basically it is a negative impact, with the effect of delay of development of a company (fig. 2).

The institutes of opportunistic behavior affect the possibility of solving the "agent-principal" problem and the problem of contractual opportunism as a behavior, that are deviating from a contract terms [15, p. 558].

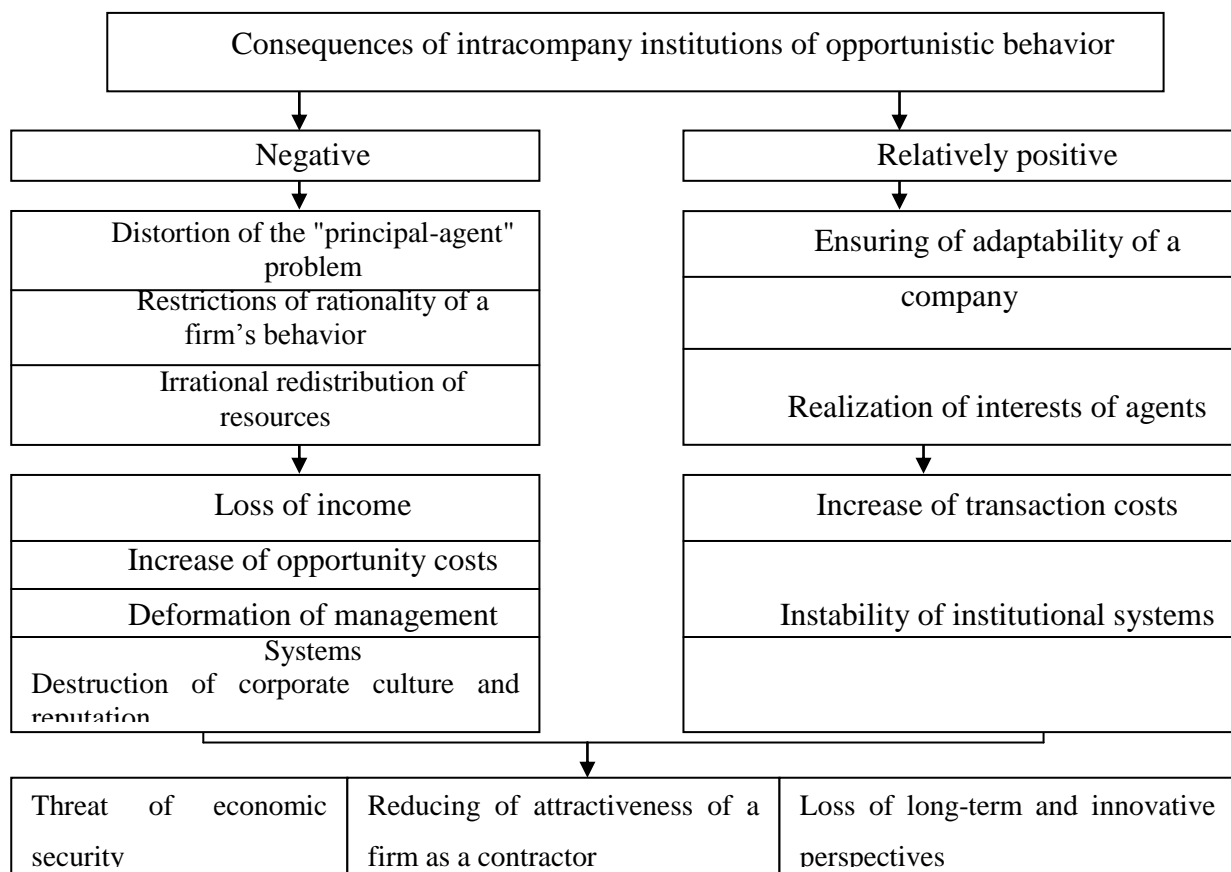


Fig. 2. Consequences of shadow institutionalization of a firm

An agent, who is in a shadow institutional environment, makes decisions based on personal financial and social-class constraints. Opportunism of actors of shadow

institutions restricts rationality of conduct of the company, promotes a warp in decision making and redistribution of resources between spheres of activity

Ineffective institutional structure prevents from taking an advantage of coordinating of economic activity. The firm loses some income, opportunity costs increase; management, motivation, decision-making systems are deformed; organizational culture and reputation of the firm are destroyed. The main consequence of these processes is a threat to economic security of the company and a loss of long-term and innovation prospects (investment myopia). As experts note, "an economic system with an excessively low estimation of the future is doomed to stagnation or at best to low growth" [16, p. 35].

However, consequences of shadow institutionalization may also have some different character. When sudden changes of environment occur, institutions of opportunistic behavior are their shock absorbers, and provide adaptability of a firm. Agents use a shadow institutional field for solving economic problems if formal institutions are ineffective. Separate elements of institutes of opportunistic behavior can cause formation of effective formal rules of conduct. Nevertheless, in the long term shadow institutionalization would increase transaction costs, immerse a firm in a shadow institutional field, reduce attractiveness of a company as a contractor.

To identify and to assess consequences of shadow institutionalization the following conclusion is used: the degree of opportunism is not a constant [16, p. 32]. Obviously, there is the critical degree of opportunism, in which an individual enters a shadow intracompany institutional field and refuses to use formal institutions. To assess consequences of shadow institutionalization we should analyze the dependence of parameters of a transaction on the degree of opportunism of an agent:

$$UI = \Delta\pi_{ia} - \Delta TAC - \Delta AgC, \quad (2)$$

where UI - estimate of effects of shadow institutionalization;

$\Delta\pi_{ia}$ - change in profits (transaction's benefits) after transition the critical value of opportunism;

ΔTAC - change in transaction costs of a company after transition the critical value of opportunism;

ΔAgC - change of agency costs on a transaction after transition the critical value of opportunism.

3. Impact on the dynamics of intracompany opportunistic institutions

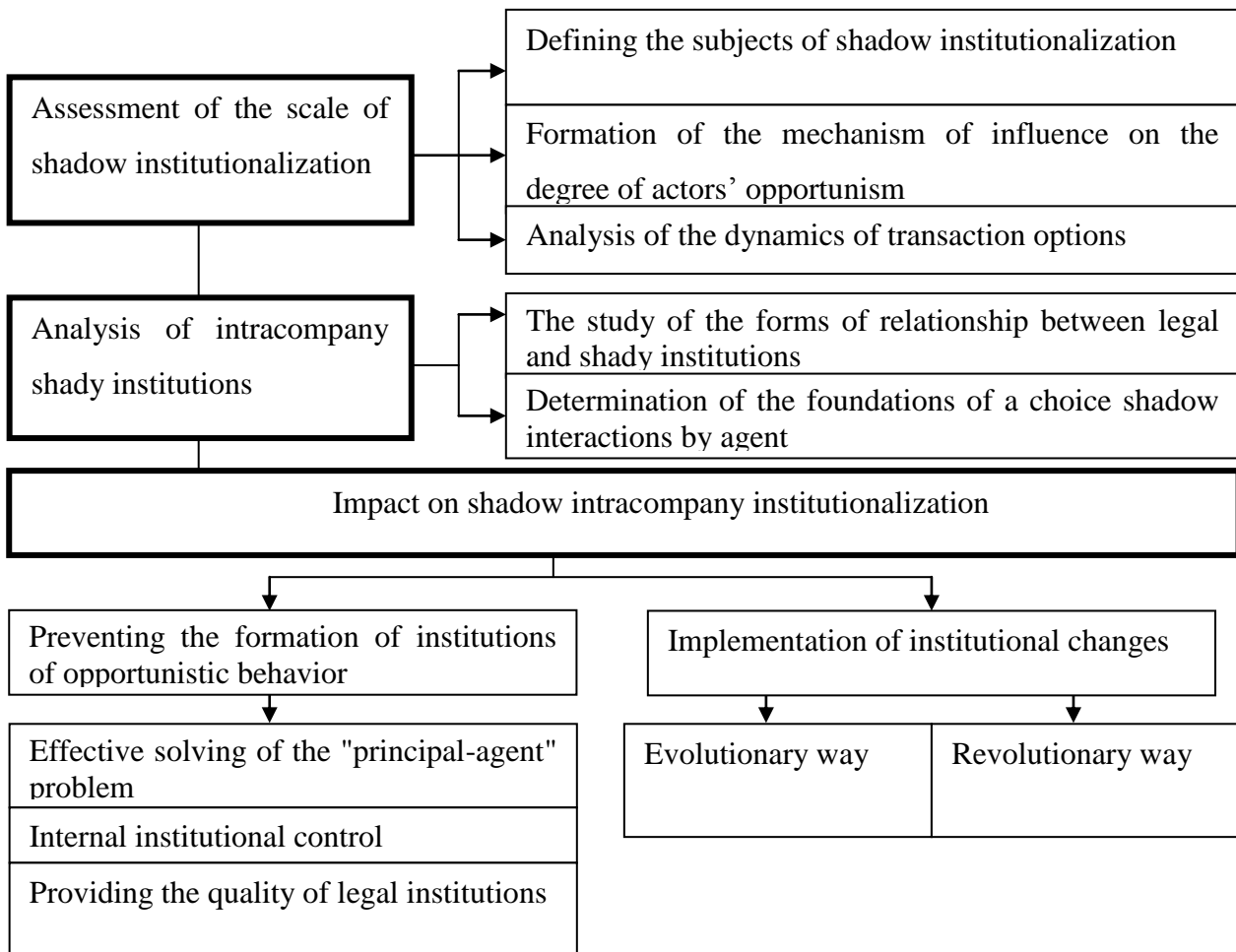


Fig. 3. Assessment, analysis and impact on intracompany shadow institutionalization

The main objective of managers of a firm is providing effective management of intracompany shadow institutionalization. It includes assessment, analysis and impact on this process (fig. 3).

Assessment of the scale of shadow institutionalization involves defining the shadow interaction, formation of the mechanism of influence on the degree of actors' opportunism, analysis of the dynamics of transaction parameters.

The first stage of the analysis of shadow institutionalization is to study the ratio legal and shady institutions. There are three forms of relationship between the rules by which people interact - expansion, touching and compromise [17, p. 51]. Expansion of institutes of opportunistic behavior is the most dangerous form because it involves extrusion of legal rules and organization of intracompany cooperation entirely on the basis of shadow institutions. Effective relationship of legal and shadow intracompany institutes is possible in the case of compromise when there are new rules that take into account the requirements of different types of transactions. Touching means the capability of the same interactions to base both on official and shady arrangements. Adverse consequences of this relationship are shown in two forms. First, when both participants choose the shadow interaction, and second, if there is uncertainty, participants interact in different types of agreements (formal and shady). In this case there is a model of relationships that is considered in frameworks of the game theory (fig. 4).

Contractor Agent of a firm	Stay in official interaction	Use an institute of opportunistic behavior
Stay in official interaction	1,2 (P ₁ ,St ₁)	θ,0
Use an institute of opportunistic behavior	0,0	2,1 (P ₂ ,St ₂)

Fig. 4. Model of selection of the type of interaction

In this model, the first player receives personal benefits from the using opportunistic behavior institutions (employee of a firm, the person who makes a decision). Player № 2 is the counterparty interested in a transaction and official interaction is more favorable for him. Pareto equilibrium (a situation when you can not improve the status of both players simultaneously) exists in two locations, designated P1 and P2 - when both parties use the same type of interaction. The condition of Shtakelberh equilibrium is the maximum of utility of players in not

simultaneous decision-making. If the player № 1 (employee of a firm) decides first, institutions of opportunistic behavior are used (St1). If the player № 2 decides first, it is a legal interaction (St2). In this case there is no Nash equilibrium (N), when none of the players can increase the profit unilaterally.

There are preconditions for the emergence of evolutionary stable strategies in this model. This strategy is a set of rules that determine the participants' choice used by most participants, and no alternative rules can supersede them.

In order to a legal rule of conduct becomes evolutionary stable strategy within a firm, the following conditions are necessary:

$$EU (\text{legally}) > EU (\text{in a shady way}), \quad (3)$$

where EU - benefits from using the type of interaction.

In this situation, taking into account the probability of using legal institutes by contractors, the condition takes the form:

$$1 \cdot p_l + 0 \cdot (1 - p_l) > 0 \cdot p_l + 2 \cdot (1 - p_l); \quad p_l > 2/3, \quad (4)$$

where p_l - probability of using legal institutes.

That is, if the share of transactions performed in a framework of official institutions exceeds $2/3$, for any participant using them is beneficial in each case. The same condition is true for institutions of opportunistic behavior.

However, the situation changes if the contractor considers both interactions equivalent (fig. 5).

Contractor Agent of a firm	Stay in official interaction	Use an institute of opportunistic behavior
Stay in official interaction	1,1(N ₁ , P ₁ , St _{1,2})	0,0
Use an institute of opportunistic behavior	0,0	1,1(N ₂ , P ₂ , St _{1,2})

Fig. 5. Transformed model of selection of the type of interaction

Therefore, in order to an official interaction becomes an evolutionary stable strategy, its share (p_l) should exceed a half:

$$1 \cdot p_l + 0 \cdot (1 - p_l) > 0 \cdot p_l + 1 \cdot (1 - p_l); p_l > 1 / 2. \tag{5}$$

The existence of control over institutions of opportunistic behavior within an organization encourages employees of a company to participate in non-shadow interaction (Fig. 6).

Supervisory authority Employee	Control the transaction	Do not control the transaction
Stay in official interaction	1,1 (St ₁)	1,2(P, St ₁)
Use institute of opportunistic behavior	-2,0	2,-2

Fig. 6. Model of selection of the interaction type under control

Under these conditions, the benefits of implementation of interaction will be determined by inequality:

$$1 \cdot p_c + 1 \cdot (1 - p_c) > -2 \cdot p_c + 2 \cdot (1 - p_c); p_c > 1 / 4, \tag{6}$$

where p_c - probability of the control by senior authorities.

Thus, the minimum requirement of non-shadow institutionalizing of a firm is an effective control of 25% of transactions. If management of a company performs this requirement, the dominant strategy of using official institutions are formed among the staff.

Social choice is the basis of individual choice of formal or shadow behavior. Using M. Weber typology of social actions [18, p. 633], we can say that an organization has most appreciable losses if individuals choose intracompany opportunistic institutions as a basis of behavior resulted in the goal-rational actions. By such conduct an agent has maximum information and cognitive abilities and makes decisions based on multistage schemes. That is, except for losses of shady transactions, opportunity costs of using human resources of a firm increase.

In the case of value-rational actions an individual is guided by the set outside objectives when he chooses official or shady transactions, so opportunity to influence his choice is real.

Affection action is the easiest subject to change, because it is based on the "stimulus - reaction" model when the goals and means are not highlighted.

We can define three main conditions that prevent shadow intracompany institutionalization.

First, existing of institutions should reflect the interests of employees of the firm, i.e. to ensure the full realization of their possibilities.

Second, the cost of subordination to legal institutions should be less than to the shadow institutions.

The third condition is the existence of internal control over institutions of opportunistic behavior that creates incentives to employees of the firm to join official interactions. Analysis of the game model "Supervisory authority - Agent" with participants' prizes from -2 to 2 formulates the minimum requirement for non-shadow institutionalization of firms - effective control of 25% of transactions. If the

management company fulfills this condition, the dominant strategy of using formal institutions is formed by staff.

The mechanism of overcoming the shadow intracompany institutionalization involves a choice between two strategies - through evolutionary transformations (the same economic system creates the conditions for transformation) and in a revolutionary way (violence way) as a result of reforms.

The evolutionary way involves creating an environment where transaction costs of transformation of shadow rules exceed the costs of cancellation and / or the introduction of formal rules (critical point).

In the case of reforms, their success depends on the ratio of means and activity of various stakeholders who are subject to institutions of opportunistic behavior. The process of such institutional change involves four stages: destruction of institutions of opportunistic behavior (reducing the density of institutional fields), creation of new official institutions, formation of meta-institution that regulates the other, and strengthening the institutional foundation.

The direction and effectiveness of institutional reforms can be determined by the game simulation. Participants of intracompany shadow institutionalization, types of resources and resource restrictions, a possibility of informal interaction, agents' targets are set as output parameters for this simulation. Costs of institutional control, its probability and size of fines for participating in the shadow institutionalization, the probability of detecting the shadow interactions as a result of institutional control, the possibility of controlling shadow institutions, the number of resources that an agent manages, the norms of firm's profit are influential parameters of modeling.

The modeling process is based on the adapted models of organizational systems with corrupt behavior of participants. One or another model is chosen according to the specific company goals and institutional transformation.

The model of corruption eradication by M.I. Levin [19] can be used where it is necessary to eliminate the vertical shadow interactions between the two levels of agents. This model enables to determine the size of the fine, in which the game is carried out without the shadow of interaction (set Nash equilibrium). Moreover, the

author shows that a large fine should be entered only for a short time to go to equilibrium without the shadow interactions. That shadow operation becomes unprofitable after the reduction of the fine to zero.

The model of corruption restriction by F. T. Lui [20] is used to search for the share of the shadow-institutionalization agents over time and to assess the impact of fines on the follow-up agents' activities. The two-period dynamic problem in a two-tier organizational system is solved in this paper.

The model of corruption in the Forest Guard by G.V. Gubko [21] enables to develop the incentive system, which provides for non-shadow agents' activities under the organizational control.

The models developed by R.A. Vybornov can solve the largest number of problems. Such mechanisms of management of organizational systems with shadow behavior of the participants as the individual and collective incentives and planning are formulated in his paper [22].

The calculation of the optimal costs of control, the probability of its realization, the size of fines for participating in shadow interactions, the probability of detecting the shadow interactions as a result of control, the justified need for advance notification about an increased probability of control and so on are the main results of these models.

Summary

Internal firm institutions of opportunistic behavior can be defined as informal conduct rules that have local nature, govern interactions within the activity of one firm; and they are a hidden form of existence of intracompany opportunism and of obtaining an individual institutional rent by actors. Rules governing the behavior of agents of the firm in illegal transactions and using of shadow rules in legal transactions are the types of institutions of opportunistic behavior.

The emergence of prerequisites of forming of intracompany institutions of opportunistic behavior; the accumulation of experience in shadow interaction; the creation of groups interested in implementing of shadow institutions and obtaining

individual rents in a system with generalized exchange; the formation and selection of institutions of opportunistic behavior; getting benefits and supporting of institutions of opportunistic behavior by groups of special interests; the initiating of the creation of new institutions of opportunistic behavior – all these are the stages of intracompany shadow institutionalization.

To identify and to assess consequences of shadow institutionalization the following conclusion is used: the degree of opportunism is not a constant.

Effective management of intracompany shadow institutionalization includes assessment, analysis and impact on the processes.

We can define three main conditions that prevent shadow intracompany institutionalization: existing of institutions should reflect the interests of employees of the firm; costs of subordination to legal institutions should be less than to the shadow institutions; the effectiveness of institutional controls. Managers should include institutional analysis and control, sanctions for using institutions of opportunistic behavior in a mission, a goal tree, job descriptions and provisions of firm's divisions in order to counter intracompany shadow institutionalization.

References:

1. Бережной И. В. Институциональные детерминанты хозяйственного порядка / И. В. Бережной // Экономический вестник Ростовского государственного университета. - 2008. - Том 6. - № 3. – С. 88 - 94.
2. Сухарев М. В. Социальные антиинституты / М. В. Сухарев // Экономическая социология. - Т. 5, № 5. - 2004. - С. 63 – 73.
3. Постсоветский институционализм / [Архиереев С. И., Белоусенко М. В., Вольчик В. В. и др.]; под ред. Р. М. Нуреева, В. В. Дементьева. - Донецк : Каштан, 2005. - 480 с.
4. Иншаков О. В. Экономические институты и институции: к вопросу о типологии и классификации / О. В. Иншаков // Социологические исследования. - 2003. - № 9 - С. 42 - 51.

5. Уильямсон О. И. Экономические институты капитализма: Фирмы, рынки, "отношенческая" контракция / Уильямсон О. И. - СПб. : Лениздат, 1996. - 702 с.
6. Альбрехт С. Мошенничество / [С. Альбрехт, Р. Вернц, Т. Уильямс]. – СПб.: Питер, 1995. – 400 с.
7. Безопасность: теория, парадигма, концепция, культура. Словарь-справочник / [автор-сост. профессор В. Ф. Пилипенко]. — М.: ПЕР СЭ - Пресс, 2005. – 192 с
8. Cohen S. Destruction of property: Motives and meanings // *Vandalism* / Ed. by C. Ward. - London: The Architectural Press, 1973.- pp.23-53.
9. Кримінальний кодекс України: Текст відповідає офіц. станом на 1 червня 2008 р. — К. : Школа, 2008. — 208 с.
10. Брокгауз Ф. А., Ефрон И. А. Иллюстрированный энциклопедический словарь Ф. А. Брокгауза и И. А. Ефрона : современная версия. – М. : Эксмо, 2008. - 287 с.
11. Денисов Д. Территория отката // *Бизнес-журнал*, 2005. - № 8. – С. 41 - 43.
12. Полищук Л. И. Нецелевое использование институтов: причины и следствия / Л. И. Полищук // *Вопросы экономики*. - 2008. - № 8. - С. 28 - 44.
13. Вольчик В. В. Группы интересов и качество экономических институтов / В. В. Вольчик, И. В. Бережной // *Экономический вестник Ростовского государственного университета*. – 2007. - Т. 5, № 2. – С. 57 - 66.
14. Стрельникова Л. В. Социальный капитал / Л. В. Стрельникова // *Общественные науки и современность*. - 2003. - № 2. - С. 33 - 41.
15. Шаститко А. Е. Новая институциональная экономическая теория / А. Е. Шаститко. — М. : Экономический факультет МГУ, ТЕИС, 2002. — 591 с.
16. Розмаинский И. В. «Homo post soveticus»: основные характеристики экономического поведения с точки зрения институционально-посткейнсианского подхода / И. В. Розмаинский // *Экономический вестник Ростовского государственного университета*. - 2007. - Т. 5, № 1. - С. 28 - 40.

17. Уильямсон О. И. Экономические институты капитализма: Фирмы, рынки, "отношенческая" контракция / Уильямсон О. И. - СПб. : Лениздат, 1996. - 702 с.
18. Вебер М. Избранные произведения / М. Вебер. - М. : Прогресс, 1990. - 808 с.
19. Левин М. И. Коррупция как объект математического моделирования / Левин М. И., Цирик М. Л. // Экономика и математические методы. - 1998. - №5. - С. 32-45.
20. Lui F. T. A Dynamic Model of Corruption Deterrence / Lui F. T. // Public Economics. – 1986 - Vol. 7. - P.76.
21. Губко М. В. Механизмы управления организационными системами с коалиционными взаимодействиями участников / Губко М. В. - М. : ИПУ РАН, 2003. – 140с.
22. Выборнов Р. А. Модели и методы управления организационными системами с коррупционным поведением участников / Выборнов Р. А. М. : ИПУ РАН, 2006. – 110 с.

CID:J11201-016

Berdina M.Y., Torosyan E.K.

**SYSTEMS AND RESOURCE APPROACHES IN THE INNOVATION
MANAGEMENT**

Saint-Petersburg State University of Aerospace Instrumentation

National Research University of Information Technologies, Mechanics and Optics

Introduction

The main problem of the high-tech industries in the current economic situation in Russia is to find and allocate efficiently the resources, mainly - investments in their broadest sense (funds, securities, technology, machinery, equipment, licenses, property or property rights, intellectual values invested objects in the business and other activities for profit (income) and achieve a positive social effect). The scale and