THEORETICAL AND APPLIED ASPECTS OF TRANSACTIONAL ANALYSIS OF ACTIVITIES OF ENTERPRISES

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Abstract

With the development of the theory of institutional economics, the assessment of enterprise management and the increase of its efficiency became important methodologies because of a high competition within industries where the fittest survive. The main purpose of this study is to expand the existing classification of transaction costs, so management teams will be able to make cost-effective decisions and increase business efficiency. The main criteria for expansion of the existing classification are a phase of implementation of transaction, time of occurrence, and degree of interaction. Influence on the internal environment of the company is an added criterion. The focus of the study is a development of a methodological approach to estimation of transaction component in business processes, as well as the implementation of these findings in transaction analysis of business performance. On the basis of the accounting and management reports of "Atomstroykomplex", authors analyzed transaction costs, developed measures in order to decrease transaction costs, and calculated the effect of these measures.

Keywords:analysis, enterprise, investment project, transaction costs, efficiency

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Introduction

The economic literature offers numerous definitions for transaction costs (TAC). Moreover, there are different approaches to transaction costs analysis. In the narrow sense, transaction costs are the costs of exchange related to a transfer of the property rights; in the broad sense, these are all costs in excess of the costs of production (transformation costs, as defined by D. North(Dolgopyatova, 2012; North, 1994). The implementation of market mechanisms is not free for the society but requires heavy expenses (Coase, 1960).

Unlike production relations and costs, associated with amount and technology of the production process, transaction costs occur when market agents build their relationships. Transaction costs are inherently comparable to a "certain resistance to the external environment" (Dolgopyatova, 2012; Malakhov, 2010). To conduct a market transaction, parties of a transaction need to gather and process a lot of information, identify agents who are appropriate to for a transaction, introduce the information about an intention to enter into the transaction and terms of a transaction to the market, conduct negotiations for the transaction, and arrange an analysis to asses terms and conditions of a contract. Initially, R. Coase only referred to the "costs of using the price mechanism" as transaction costs(Coase, 1960). Later, transaction costs came to include costs of using administrative controls. Given this broader definition, the term "transactions" may apply to the relations both between economic agents and within a company.

D. North noted that the costs of gathering and processing information are "the key to the costs of transactions, which consist of the costs of measuring valuable attributes of what is being exchanged and costs of protecting rights and policing and enforcing agreements"(North, 1994).These costs are the main driver behind the structure and evolution of geopolitical, social, and economic institutions.If a national economy is regarded as a life support system for the society (households), then, according to K.J. Arrow, transaction costs may be referred to as the costs of operating an economic system.

Transaction costs represent any resources, such as money, time, labor, etc., spent for "the alienation and acquisition of the rights of property and liberty created by society" (Winslow, 2011; Malakhov, 2010; North, 1994).To substantiate transaction costs, the authors of the institutional analysis focus on two essential points (Baev, Podshivalova, 2013).These two points are divergence of economic interests of the interacting parties and uncertainty due to fragmentary (and distorted) information, as well as limited capability of the agents to process this information (Eggertsson, 2010). In this context, transaction costs are interpreted as the costs of coordinating the activity of economic agents and resolving the allocation conflict between them.

The modern economic theory offers a variety of definitions and classifications of transaction costs. According to C. Menard, transaction costs are the costs of operating an exchange system or using the market to ensure allocation of resources and transfer property rights. Menard conventionally divides transaction costs into four groups:1. Exclusion costs that result from the issue of inseparability. In a joint activity, measurementof productivity of each production factor is difficult. Moreover, a detailed differentiation is impossible when determining payment for some kinds of services, e.g. transportation services.2. Information costs, including gathering and processing costs and costs of training to use the information system.3. Market scale costs: if a market is growing, development of trust is problematic and expensive.4. Costs of opportunistic behavior related to the egotistical behavior of economic agents in a competitive environment (for example, fraud). This often results in benefits for some agents and losses for others.According to the concept by P. Milgrom and J. Roberts, transaction costs include coordination costs and motivation costs (Marina, 2012).

Based on the contracting timeframe, D. North and J. Wallis divide transaction costs into three categories (North, Wallis, 1994).Preliminary transaction costs are costs incurred before a transaction, for example those related to gathering information about prices, potential alternatives, reliability of the other party upon entering a contract, etc. The second part of transaction costs refers to transaction execution and exchange and includes negotiations, contract award, obtaining documents certified by a notary, insurance, settlements, etc. The third part includes costs incurred after a transaction, such as contract policing and enforcement, quality control, etc.

E. Furubotn and R. Richter classify transaction costs by the area where they arise (Marina, 2012).First, these are market transaction costs, including information search and processing costs, bargaining and decision-making costs, and monitoring and enforcement costs. It should be noted that this classification of market transaction costs matches the three stages of the contracting process defined in the classification by North and Wallis.

Second, these are managerial transaction costs, including costs of development, introduction, maintenance, and modification of the organizational structure.

Third, these are geopolitical transaction costs, including costs of creation, maintenance, and modification of both formal and informal political organizations and operating a political system. The latter includes legislative, defense, judicial, transportation, and educational institutions.

Based on the summary of the studies, transaction costs may be divided into five functional groups.

1. Costs of gathering and processing information (searching for information about sellers, buyers, and current prices, as well as losses due to incomplete or unreliable information).

2. Bargaining and contracting costs. Bargaining, concluding, and executing contracts require certain costs, which increase the product price. In addition, this group also includes losses due to ineffective, improperly executed, and poorly protected agreements.

3. Measuring costs. These are the costs of acquisition and maintenance of measuring equipment, the measurement process, protection against measurement errors, and losses due to such errors. Product standardization, corporate guarantees, trademarks may reduce these costs.

4. Specifications and property rights protection costs. These include costs of supporting judicial and law enforcement authorities, resources spent to redress violations of rights, and losses due to inadequate specifications and unreliable protection of property rights.

5. Costs of opportunistic behavior. The term coined by O. Williamson means an individual's misconduct violating the terms of a transaction to get one-sided benefits to the other party's disadvantage (Popov, Simonova, 2005). These costs related to post-contractual behavior are typical of teamwork when the capabilities of each party are unknown. There are two main kinds of post-

contractual opportunistic behavior: shirking and hold-up. Therefore, the costs of opportunistic behavior consist of performance losses and costs required to limit this behavior.

Transaction costs may occur both explicitly and implicitly. If they occur implicitly, they cannot be recorded. Moreover, their scale may be so large that they will block the possibility of a transaction. Transaction costs may occur when decisions are made at both individual and collective levels. For example, all members of the society share the costs of operating a legal system, while the costs of legal defense for a particular transaction are borne only by the parties to such transaction.

Transaction costs may be fixed or variable. Fixed transaction costs are costs borne one time only for a certain number of transactions. These may include such expenditure as establishing and protecting property rights. Variable transaction costs are costs borne for each transaction separately. These may include costs of preparing and implementing a specific contract.

Transaction costs determine and shape many processes and phenomena and are associated with any economic activity of entities. No company as an economic entity can avoid spending resources related to search for information, monitoring, selection, and decision-making.

According to different authors, the share of transaction services provided by the private and public sectors in Russia has been steadily increasing. This is driven by the transaction costs shifting from the non-market area to the market area. At present, the share of the transaction sector is estimated at around 50% (Popov, Simonova, 2005).

. According to the study, the existing classifications of transaction costs have a number of drawbacks, including an unclear structure, incomplete characteristics, ambiguous terminology, inflexibility, etc. The rapidly changing market and the impact of the marketing environment on the high technology industry have resulted in the need to update the existing classification.

1. Advanced classification of Transaction costs

The availableclassification was expanded by the following criteria: Transaction Stages; Time of Occurrence; Degree of Interdependence. A new classification criterion - Impact on a Company's Internal Environment - was also proposed. The classification of transaction costs was expanded by their target area and timing with regard to the transaction, transaction costs are divided into three main groups: before, during, and after the transaction. The authors have expanded each of these groups based on the transaction stages. It is proposed to rename the costs of searching for information at the preliminary (preparation) stage of a transaction “analytical costs” and give a broader definition to such costs. According to researchers, the costs of searching for information include gathering information about prices, potential alternatives, reliability of the other party to a contract, etc. The authors believe that numerous costs may be part of this group. For this reason, they should be classified as a separate group.

The costs included in this group are costs related to a company's marketing activities. A detailed breakdown of marketing costs will allow the company management to get a full understanding of the company's marketing activities, including any costs required by these activities. The exact amount of search costs will eventually depend on the company's organizational structure. However, most of the costs are costs related to the company's marketing activities.
At this stage of a transaction, marketing activities will include analytical tools. These are:

1. Marketing research:1.1. Variable (gathering and processing of new information for a specific project);1.2. Fixed (processing the existing (secondary) information).

2. Marketing analysis and reporting:2.1. Analysis of the target audience, buyers, and consumers;2.2. Competitor analysis;2.3. Product (work, service) mix analysis;2.4. Analysis of the company's pricing policy;2.5. Analysis of the company's sales policy;2.6. Marketing communications analysis and planning;2.7. Analysis and selection of suppliers.

In our opinion, this is the most comprehensive classification of marketing costs. Companies may use different marketing tools, subject to the specific features of their business or industry, their scale, and organizational structure. Marketing costs may conventionally be divided into fixed and variable costs. Marketing research, as well as different types of marketing analysis, may be conducted either on an ongoing basis or as and when required for a specific project. Each item of the above classification of marketing costs is a separate type of transaction costs that may be optimized or reduced in their own way.

In addition, managerial decision-making costs have been noted at the stage called *Before the Transaction*. These costs include managerial decisions made after marketing research and analysis and based on marketing experts' recommendations. They represent risks related to making alternative managerial decisions.

Transaction security costs have also been noted as a separate item because they are essential when a decision is made to enter into a transaction with a certain partner. These costs primarily include the risks of partners' insolvency or unreliability.

The stage called *During the Transaction* involves transaction execution and exchange, e.g. negotiations, contract award, obtaining documents certified by a notary, insurance, settlements, etc. Here, the authorsnoted the bargaining costs. However, bargaining costs at this stage differ from those at the previous stage. Bargaining costs during the transaction may include, first of all, time spent, delays in signing contracts, etc.

After the transaction, contract enforcement costs have been noted in addition to politicization costs and costs of opportunistic behavior. At this stage, the company's divisions enforce proper observance of the transaction terms by all partners (in particular, a long-term transaction).

In *the Area of Occurrence*, social costs have been noted as part of external costs, in addition to market and political costs. These costs are borne by businesses, whose performance is associated with and depends on the public opinion. Such businesses may include e.g. construction companies that may destroy architectural monuments or forests in the course of their operations, which will result in a massive public outcry.

The authors have noted a new classification criterion called *Impact on a Company's Internal Environment*. Transaction costs classified under this criterion are divided into positive and negative costs. The types and amounts of costs impact the ultimate financial performance of a company. However, there are costs that must be borne for a company to operate efficiently. For example, by spending on marketing research, a company may receive valuable information to improve its competitive edge. These are “positive” marketing costs. Costs of opportunistic behavior result in a negative outcome only.

2. Analysis of transactional costs for “Atomstroykomplex”

To assess transaction costs of a specific business, the first thing one should do is look at company’s organizational structure. In this paper, the subject of research is a company called Non-Profit Partnership “Atomstroykomplex” based in the city of Yekaterinburg. The company operates under investment projects in a public-private partnership.

The company is organized under a divisional departmentation scheme.

The key advantages of divisional departmentation are:Clear division of responsibilities; A highly flexible and self-adapting system; Highly independent business units; Less load on top management; Simple communication networks; Personnel autonomy, high motivation.

Negative sides of this scheme may include:High demand for managerial personnel; Higher costs due to overlapping functions; Difficulties in pursuing a single policy; Lack of personnel integration; Poor synergy.

According to the transaction costs classification presented here, the most part of a company's transaction costs are analytical costs borne by the company's marketing division. Therefore, the organizational structure of the company's marketing division must be reviewed to assess these costs and find ways to reduce them.

The key objective of the marketing division in a construction company is to develop and put in place an effective system for exchanging, processing, and gathering valuable information among the company's business units to ensure controllable, predictable, and sustainable provision of a full range of construction services. Successful marketing management almost entirely depends on the performance of top management personnel. Thus, top management personnel should have a deep understanding of all economic processes that take place in the company's divisions. Plus, some of the works are outsourced. This is a line and staff organization.

Its advantages may include:Potential engagement of consultants and experts; Greater efforts to develop solutions.

The disadvantages are:A tendency towards overcentralization; An inadequate level of responsibility. Managerial decision makers do not participate in the further implementation process.

The authors have reviewed the theory and classification of transaction costs and proposed a new, time-based classification, with analytical transaction costs included in one of the stages. Analytical transaction costs constitute the majority of total transaction costs of a company. Moreover, they are best to quantify. After that, key indicators of a company's financial performance should be analyzed to assess transaction costs for a specific investment project (Golubkov, 2012).

Consider the following example: the construction company is in question of taking part in a social housing project. Each stage of the project involves certain transaction costs. Using the above classification, these costs are classified according to the transaction stage:Before the transaction; During the transaction; After the transaction.

The amount of costs for each of the company's divisions must be calculated, with the share of transaction costs identified. The following transaction costs were obtained from calculations performed by the company's personnel (see Tab. 1).

Tab. 1:Elements of the Company's Transaction Costs at Different Stages of the Transaction

Types of costs	Before optimization, thousand RUB	After optimization, thousand RUB
Before the transaction		
1. Analytical costs	28.000	50.000
2. Bargaining costs:	1.824	1.824
3. Transaction security costs	58.520	58.520
During the transaction		
4. Measuring and monitoring costs	54.479	54.479
5. Specifications and property rights protection costs	19.307	20.307
6. Bargaining costs	1.824	1.824
After the transaction		
7. Contract enforcement costs	182.116	132.116
Commercial Department	12.809	12.809
8. Costs of opportunistic behavior	550.000	210.000
Cost per one transaction	894.246	527.246

Source: The official web-site of “Atomstroykomplex” (http://www.atomsk.ru/)

Our next step is to make the cost matrix. To do this, we determine the share of each type of costs in the total costs and rank them. After that, authorscreate the cost matrixthat shows that contract enforcement costs and costs of opportunistic behavior account for most of the total costs. Besides, costs of opportunistic behavior are classified as negative costs. The share of these costs in the total costs is 61.5%.(Popov, Vlasov, 2012).

Such a high value of costs can be due to two reasons:inadequate performance of the marketing department; errors made by the company's management in decision-making.

Inefficiency of the Marketing Department may be caused by the followinglow level of competence of marketing personnel,inadequate organizational structure of the Marketing Department, or/andinsufficient and incomplete information.

Errors made by the company's management in decision making may be caused by the following:Lack of coordination in decision making; Low level of competence of senior managers; No decision making roadmap in the company; Inefficient organizational structure of the company.

The paper focuses on a case study involving senior managers, who made decisions based on their own ideas instead of recommendations provided by the Marketing Department, which resulted in such high costs. In this case, analytical costs add to the costs of opportunistic behavior, because the Marketing Department has already done its job.As can be seen from the cost matrix, contract enforcement costs represent a significant proportion of the total costs. Despite the fact that these are “positive” costs, they still need to be optimized.The cost analysis showed that the share of these costs does not exceed 10%, which is quite reasonable for the project.

3.Optimization of transactional costs for “Atomstroykomplex”

1. Optimization of the organizational structure of the Marketing Department. In this case, the organizational structure has to be transformed into a matrix structure. Moreover, a task force should be established for each project. The task force should consist of the experts from the Marketing Department. In that way, the powers will be separated, which will translate into better performance of marketing experts and no need to outsource important tasks. As a result of improved performance by the Marketing Department, senior managers will have more confidence. This will accordingly bring down the managerial decision-making costs.

2. Any changes in the organizational structure of the Marketing Department require clear rules for all relevant business processes.

3. Raising the level of competence of senior managers.

4. Providing ongoing employee training to reduce contract enforcement costs.

5. Introducing an accounting system for transaction costs in all company divisions.

3.1 Transaction costs after the optimization

Next, we will look at how transaction costs change after these optimization steps are taken. For this purpose, we will use a break-even point graph. Sales revenues from the project amounted to RUB 30 million, including RUB 20 million in variable costs and RUB 5 million in fixed costs (see Table 2).

Tab. 2: Financial Indicators before and after Optimization of Transaction Costs

Indicator	Before optimization	After optimization
Fixed costs, thousand RUB	5,000	5,000
Variable costs, thousand RUB	20,000	19,633
Sales revenues	30,000	30,000
Break-even point, thousand RUB	15,000	14,469

Source: The official web-site of "Atomstroykomplex" (http://www.atomsk.ru/)

As can be seen from the table, break-even sales are lower, which translates into extra profit.

Following the analysis of transaction cost assessment methods and their use in different Russian and foreign companies, we should identify the origins of transaction costs and find the ways and means to reduce them. Contract enforcement costs and costs of opportunistic behavior account for the majority of the total costs.

Therefore, the following can be recommended to optimize transaction costs: 1. Optimizing the organizational structure of the Marketing Department. 2. Establishing clear rules for the company's divisions. 3. Raising the level of competence of senior managers. 4. Providing ongoing employee training. 5. Introducing an accounting system for transaction costs in all company divisions.

The number of transactions (and therefore transaction costs) in a company may increase subject to the complexity of the production process. This is why the objective of the construction company's management is to reduce the number of transactions by eliminating excessive overhead costs.

Conclusion

When different structures within the same business system are operating consistently, transaction costs are minimized. However, a high degree of specialization and localization of business contacts is a typical feature of contemporary economic relations. It means that the structures are not so consistent and transaction costs are growing. In many cases, business entities employ alternative economic organization models to reduce these costs, such as: discrimination against consumer groups and areas of distribution; tie-ins; related contracts; franchising, etc.

In our opinion, lack of information is one of the most important contributors to the growth of transaction costs. If there is a lack of information, the company's management cannot be sure that it does not overpay for resources, goods or services they purchase or that they get a real price for the products. That is why it is essential to introduce an internal information system for managing transaction costs to maximize cost management efficiency (Fahey, Ansoff, 1989; Dolgopyatova 2012). With this system in place, all company divisions will be able to exchange cost information quickly, monitor the amount of costs at each stage of a transaction, and forecast costs for future projects. Moreover, the company management will receive highly "transparent" information about all business processes in the company for all projects (Demsetz, 1967).

These steps will improve the efficiency of each investment project, optimize costs, and ultimately make the final product more affordable and attractive for the consumer. The issue of lower transaction costs is of particular importance for private-public partnerships because companies are forced to offer the most favorable transaction terms to the government. In this situation, they have to find all possible ways to optimize resources and minimize costs.

The proposed approach to assessing and reducing transaction costs will give managers a clear picture of the structure and types of these costs and allow them to promptly make optimization decisions. In its turn, this will improve both financial and social aspects of investment projects, including those co-financed by the government.

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