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**IMPACT OF ERP SYSTEMS IMPLEMENTATION ON FINANCIAL  
DECISION-MAKING PROCESS**

E. V. Zhegalova (a)\*, Y. V. Semernina (b), E. A. Nesterenko (c)

\*Corresponding author

(a) Samara State University of Economics, Soviet Army Str., 141, Samara, Russia, zhegalova@rambler.ru

(b) Yuri Gagarin State Technical University of Saratov, Politechnicheskaya Str., 77, Saratov, Russia,  
ysemernina@yandex.ru

(c) Yuri Gagarin State Technical University of Saratov, Politechnicheskaya Str., 77, Saratov, Russia,  
nesterenko.67@bk.ru

**Abstract**

Over the past few decades, one of the key trends recorded both in the global economy as a whole and in national economies in particular, is the trend of digitalization of the economy. The insider model of corporate governance assumes a relatively low level of automation of business processes in combination with segmentation of information flows. The intensive development of this trend leads to a radical change in the business environment in which companies operate, and the most significant changes are made in the IT environment. Therefore, the transformation of the IT environment contributes to a radical transformation of corporate governance: the insider governance model typical for Russia is gradually being replaced by a model focused on improving business efficiency. By historical standards, transformation processes in the field of corporate governance in Russia are taking place in a very short time, which was further reduced by the coronavirus pandemic, which made the issue of improving the efficiency of business processes literally a "matter of survival" for domestic companies. It is advisable to analyze large-scale changes in corporate governance models based on the results of implementing complex information systems, in particular, ERP-class systems, which initially involve building a common business processes model and, accordingly, a common company data model.

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## 1. Introduction

At the moment, Russia has developed a unique insider model of corporate governance. It is characterized, in particular, by the predominance of large owners in the capital structure of companies; the lack of a clear separation of ownership right and control management right; the sole nature of managerial decision-making, including financial decisions; a low degree of information transparency, and others (Lapinskas, 2018). One of the main reasons for the formation of this model of corporate governance is the need for significant efforts by the owner to maintain control over the company.

The insider model of corporate governance assumes a relatively low level of automation of business processes in combination with segmentation of information flows. For example, in Russia, it is common practice to limit corporate automation exclusively to the automation of regulatory accounting, as well as personnel accounting and payroll. At the same time, there are serious restrictions on access rights for all groups of users, both at the level of information systems as a whole (access to only one system) and at the level of individual subsystems (access only to those subsystems in which users work on a regular basis). For such a model of corporate governance: "vertical" information flows are predominant ("bottom-up" - consolidation of information, including those necessary for making financial decisions, and "top-down" - informing about decisions made and administrative documents), while horizontal information flows are much less developed, and quite often they are practically not automated. As a result, an extremely heterogeneous information space is formed at the corporate level due to the fundamentally different level of automation of individual business processes, the independent nature of their automation, and the lack of a common concept of a single information system. In such conditions, making any management decisions, and especially financial decisions, is complicated due to the "effect of information delay" and the "effect of low quality of information". The natural result of these information effects is a low speed of financial decision-making and an insufficient level of their validity.

## 2. Problem Statement

As noted above, the trend of global digitalization has contributed to the transformation of the Russian corporate governance model. In recent years, Russia has begun a difficult and very painful transition to a model of improving business efficiency, which comes into multiple contradictions with the insider management model. The presence of such contradictions and their fundamental nature allows us to speak not about creating a "hybrid model" of corporate governance, but about changing the model itself (Zvereva et al., 2019).

Thus, one of the mandatory components of the efficiency improvement model is the creation of a unified information space at the corporate level. The creation of such a space is ensured by the introduction of information systems that simultaneously automate key business processes of companies and are aimed at integrated management of their resources, in particular, ERP systems. The fundamental difference between ERP systems and classical accounting systems is the provision of inter-process integration, which ensures the "end-to-end" nature of business processes (Mantsivoda & Ponomaryov, 2019).

From the perspective of corporate governance, this transition means a reorientation from managing individual processes (focusing on intra-process issues) to integrated process management (focusing on

inter-process issues), i.e. a long-term change of priorities in the corporate governance system (Nissen et al., 2018).

However, modern scientific studies on this issue focus not on the transformation of corporate governance as a result of the implementation of ERP systems, but mainly on the economic results achieved as a result of their implementation (Cheremisina, 2019).

Moreover, quite often the increase in the economic efficiency of companies as a result of the implementation of ERP systems is not linked to the transformation of corporate governance at all, but is interpreted as a result achieved by improving the quality of information support for the existing corporate governance model.

The dominance of such approaches in evaluating the results of implementing ERP systems leads to the fact that the process of implementing ERP systems begins to be considered apart from corporate governance processes (in fact, as an independent process that leads to the transformation of the corporate IT environment). At the same time, it is the awareness of the imperfection of the company's existing management system that is a prerequisite for the implementation of ERP systems. For this reason, it is advisable to consider the implementation of ERP systems not as an autonomous process that develops in the field of information technology, but as an auxiliary process within the framework of changing corporate governance in general.

### **3. Research Questions**

When evaluating the impact of implementing ERP systems on corporate governance in general and on the financial decision-making process in particular, internal user assessments are of the greatest scientific interest. These assessments are quite difficult to obtain, but they are characterized by greater representation and objectivity in comparison with external assessments of implementation results given by companies engaged in the development, implementation and support of ERP systems. The fact is that in most cases, external assessments are subjective in nature, in particular, they are focused on reflecting only the advantages of implementing ERP systems and do not take into account changes in corporate governance at all. A distinctive feature of the study is the focus exclusively on internal user assessments and the complete rejection of the use of external assessments.

The analysis of the transformation of the corporate governance model when making financial decisions is carried out from the point of view of the stages of their adoption. In this regard, the financial decision-making process is decomposed into 6 standard sequential stages:

- setting a financial goal;
- identification of possible options for achieving the set financial goal;
- collecting and evaluating information necessary for making a financial decision;
- making a financial decision;
- implementation of a financial decision;
- monitoring the results of making a financial decision.

The transformation of the corporate governance model is analyzed in relation to each selected stage of financial decision-making.

#### **4. Purpose of the Study**

The purpose of this study is to identify transformational shifts in the national insider model of corporate governance in financial decision-making as a result of the introduction of ERP systems. The study of transformational shifts is based on data from a sample survey of Russian companies that have implemented ERP systems. The study focuses on the differences from the traditional Russian insider model of corporate governance and, most importantly, on the reasons for their occurrence. The study did not provide a qualitative assessment of the recorded changes in the corporate governance model (negative, neutral, positive) due to ongoing transformation processes.

The study took into account the level of automation that preceded the introduction of ERP systems, i.e. it was assumed that at least part of the company's business processes had already been automated. Thus, the ERP system was considered as a replacement information system of a new generation, which allows for comparability of the results obtained. The analysis of corporate governance transformation did not take into account the size of companies that implemented ERP systems, their industry affiliation, ownership structure, and other factors.

#### **5. Research Methods**

The study used a sample survey method that combines the use of questionnaires (questionnaires were sent by e-mail) and a telephone survey (conducted after receiving answers to the questionnaire questions). The initial sample included companies that implemented the ERP systems "1C: ERP enterprise management 2". The list of companies is obtained from the official website of the developer of this software product – 1C LLC (1C, 2020). The choice in favor of this software product was made because of its wide distribution on the Russian market (by the number of implementations).

As part of the sampling observation, companies were sent a questionnaire consisting of an explanatory preamble (highlighting the stages of financial decision-making) and 12 questions (2 questions for each stage). The questions in the questionnaire were standardized: the first question suggested highlighting one of the most significant changes at this stage, and the second one suggested noting the reasons for its occurrence. All questions did not involve choosing from the suggested answers. In total, questionnaires were sent to 350 companies that implemented ERP systems in 2018-2019, and completed questionnaires were received from 41 companies. Only one questionnaire was accepted from each company, that was received chronologically first. The survey was conducted in August-September 2020, and the results were processed in October 2020.

#### **6. Findings**

The results of the survey were clarified (by telephone communication with representatives of companies; the clarifying conversation was conducted once with one representative of the company), then depersonalized, then systematized and grouped by the frequency of responses. Transformational changes that received more responses were identified as the most significant. All responses to the questionnaire were found to be equivalent.

The 10% criterion was used as the minimum acceptable "cut-off threshold" for the frequency of occurrence of both transformational changes in the corporate governance model and the reasons for their occurrence. The use of this criterion in a sample survey implies that a response is recognized as relatively frequent if the frequency of its occurrence among the responses of respondents numerically exceeds 10% of the total number of respondents. For a volume of sample equal to 41 (the number of companies that received questionnaire), a discrete value of "cutoff threshold" is 5 answers, i.e. if any of the answers to the question "gain" 4 answers and less, than it is irrelevant (relatively rare). If it is 5 or more responses, then it is relevant (common).

So, as a result of the survey, the most significant change in the stage of setting financial goals for respondents was an increase in the level of their specification (27 responses from respondents), and this trend was most clearly manifested in relation to medium-and long-term goals. The main reasons for this change were the appearance of a sufficient amount of information (23 responses), an increase in the speed of its obtaining (18 responses), and an increase in the information quality (14 responses). It is noteworthy that at the stage of determining possible options for achieving financial goals, respondents did not identify any significant changes: none of the respondents' answers scored 5 or more responses.

When collecting and evaluating information necessary for making a financial decision, respondents noted a significant reduction in the time spent on collecting information (35 responses). It is worth noting that many respondents emphasized a multiple reduction in labor costs for this process ("several times"), but did not mention the reduction in labor costs for evaluating information. The work of all users in the same information system (24 responses), common rules for entering information (19 responses), and standardization of business processes (12 responses) were the reasons that caused the effect. At the stage of financial decision-making, the implementation of an ERP system led, according to respondents, to a slowdown in their decision-making (22 responses). The respondents identified such reasons for this transformation as making comparisons with similar decisions made earlier and recorded in the information system (16 responses), using additional analytical information, including additional analysis sections (13 responses), and comparing with planned indicators if possible (8 responses).

At the stage of implementation of financial decisions, respondents noted an increase in the level of personal responsibility for the implementation of made decisions (29 responses). Additionally, the respondents indicated that the reasons for this problem were the unambiguous identification of responsible persons in the information system (20 responses), the general division of areas of responsibility (11 responses), and the use of mandatory information tools (automatic mailing of messages, emails) (7 responses).

When monitoring the results of financial decision-making, respondents focused on increasing the transparency of the monitoring process (31 responses) by increasing the availability of information (21 responses), the mandatory process of entering information (17 responses) and its regularity (15 responses). The number of respondents' responses was used to assess the scale of transformational changes at each stage of financial decisions-making. The changes with the highest number of responses of the respondents admitted a larger scale and vice versa (corresponding to the ranking of the stages of financial decision-making, conducted on the principle "from big to smaller changes", presented in the Table 1).

**Table 1.** Distribution of stages of financial decision-making by the scale of their transformational changes that occurred as a result of the implementation of ERP systems (from large changes to smaller ones)

<b>The stage of financial decision-making</b>	<b>The most significant transformational change</b>	<b>Number of responses from respondents who highlighted the corresponding change</b>	<b>Causes of transformational change</b>	<b>Number of responses from respondents who identified the corresponding reasons of the change</b>
<b>Collecting and evaluating information necessary for making a financial decision</b>	Significantly reduce the time spent collecting information	35	- Work of all users in one information system	24
			- Uniform rules for entering information	19
			- Standardization of business processes	12
<b>Monitoring the results of financial decision-making</b>	Increasing the transparency of the monitoring process	31	- Increasing the availability of information	21
			- The mandatory process of entering information	17
			- Regularity of the information input process	15
<b>- implementation of a financial decision;</b>	Increasing the level of personal responsibility for the implementation of the decision	29	- Fixation of the responsible persons in the information system	20
			- General division of responsibility areas	11
			- The use of mandatory informing means	7
<b>Setting a financial goal</b>	Increasing the level of financial goal specification	27	- The appearance of a sufficient amount of information	23
			- Increasing the speed of obtaining information	18
			- Improving the quality of information	14
<b>Making a financial decision</b>	Slowing down financial decision-making	22	- Making comparisons with similar decisions made earlier	16
			- Use of additional analytical information	13
			- Comparison with planned indicators, if possible	8
<b>Identifying options for achieving the financial goal</b>	The sample survey did not reveal any transformational changes at this stage of financial decision-making			

## 7. Conclusion

The results of a sample study suggest that the introduction of ERP systems leads to a significant transformation of the financial decision-making process in Russian companies. Out of the 6 selected stages of financial decision-making, respondents noted significant changes at 5 stages, and only at 1 stage they did not notice significant changes in terms of corporate governance. It can be assumed that this distribution of transformational changes is caused by the information used at different stages of the financial decision-making process (Ashmarina & Murzagalina, 2021; Ashmarina & Pavlova, 2020). The stages that have undergone more changes involve the use of internal information that is contained in ERP systems. However, at the stage of determining possible options for achieving the set financial goal, external information obtained from external sources, rather than from ERP systems, is primarily used. Accordingly, the transformation of the corporate (internal) information environment leads to the transformation of the stages of financial decision-making associated with its regular use. At the same time, the transformation of the insider model of corporate governance itself is far from completion. Almost all the identified changes directly affect the financial decision-making process (as a kind of management algorithm), while the conceptual approaches to making such decisions remain unchanged, i.e. inherent in the insider model of corporate governance. In particular, it is necessary to note the individual nature of decision-making and the combination of ownership and management rights.

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