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Management control in the big companies: new approaches

Abstract. The authors systematized the problems of organizing and implementing management control in the modern big enterprises. The expediency of using blockchain technology in big companies was proved in terms of ensuring adaptive regulation of their functioning, avoiding inefficient operations of departments, optimization of employees' responsibilities, opportunities to improve staff motivation.

A multi-block organisational model of management control at big enterprises was proposed, which is unlike to the existing ones allows quickly change the parameters in terms of the human resource management, as well as the level and type of tasks setting, assessment of tasks implementation, methods for calculating the components of motivation, and reporting in view of dynamically changing external environment.

The proposed blockchain technology was developed for the Joint Stock Company Russian Post, a natural monopolist in the Russian market with 90 branches and divisions, providing postal services all over the country.

The recommendations on the software implementation for the proposed model were developed. The software package of this model can be successfully integrated into existing and actively used in practice in some big enterprises information systems for monitoring the achievement of the organization's development goals and resource costs (web services and task management software suites: Any.DO, Doit.im, Evernote, Habitica, Maxdone, Things, PrettyTasks, TickTick, Todoist, LeaderTask, Wunderlist, etc.).

Keywords: Management Control; Management Information System; Big Companies; Blockchain Technology; Management Systems Information Support; Management Software Suites; Russian Post

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Управлінський контроль у системі менеджменту великих компаній: нові підходи до організації

Анотація. у статті систематизовано проблеми організації та здійснення управлінського контролю на сучасних великих підприємствах. Обґрунтовано доцільність використання технології блокчейн в управлінні великими компаніями з точки зору забезпечення адаптивного регулювання функціонування, виключення надлишкових функцій структурних підрозділів, оптимізації обов'язків співробітників, можливості поліпшення мотивації персоналу. Запропоновано багатоблокову модель організації управлінського контролю на великому підприємстві, що відрізняється від існуючих своєю варіативністю, надаючи можливість оперативно змінити параметри як у частині категорії працівників, так і в частині рівня й виду постановки завдань, оцінки їх виконання, методики розрахунку мотиваційної складової,

а також звітності з урахуванням динамічно змінюваного зовнішнього середовища. Дана модель була розроблена для російського акціонерного товариства «Пошта Росії», яке є природним монополістом на російському ринку послуг поштового зв'язку, і має 90 філій і відокремлених підрозділів.

Для реалізації запропонованої моделі розроблено рекомендації щодо використання програмного комплексу, який може бути успішно інтегрований в існуючі інформаційні системи контролю досягнення цілей розвитку організації і витрат ресурсів (веб-сервіси й набори програмного забезпечення для управління завданнями: Any.DO, Doit.im, Evernote російськомовному, Habitica, Maxdone, Things, PrettyTasks, TickTick, Todoist, lidertask, Wunderlist та ін.).

Ключові слова: управлінський контроль; інформаційна система менеджменту; великі компанії; технології блокчейн; інформаційне забезпечення систем управління; «Пошта Росії».

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Управленческий контроль в системе менеджмента крупных компаний:

новые подходы к организации

Аннотация. В статье систематизированы проблемы организации и осуществления управленческого контроля на современных крупных предприятиях. Обоснована целесообразность использования технологии блокчейн в управлении крупными компаниями с точки зрения обеспечения адаптивного регулирования его функционирования, исключения избыточных функций структурных подразделений, оптимизации обязанностей сотрудников, возможности улучшения мотивации персонала.

Авторами предложена многоблочная модель организации управленческого контроля на крупном предприятии, отличающаяся от существующих своей вариативностью и позволяющая оперативно изменять параметры как в части категории работников, так и в части уровня и вида постановки задач, оценки их выполнения, методики расчета мотивационной составляющей и отчетности с учетом динамично меняющейся внешней среды. Данная модель была разработана для российского акционерного общества «Почта России», которое является естественным монополистом на российском рынке услуг почтовой связи, и имеет 90 филиалов и обособленных подразделений.

Для реализации предложенной модели разработаны рекомендации по использованию программного комплекса, который может быть успешно интегрирован в существующие информационные системы контроля достижения целей развития организации и затрат ресурсов (веб-сервисы и наборы программного обеспечения для управления задачами: Any.DO, Doit.im, Evernote, Habitica, Maxdone, Things, PrettyTasks, TickTick, Todoist, ЛидерТаск, Wunderlist и др.).

Ключевые слова: управленческий контроль; менеджмент; крупные компании; технологии блокчейн; информационное обеспечение систем управления; «Почта России».

1. Introduction

In the modern intricacies of economic relations, growing dynamism, ambiguity of environmental factors, and competition for resources, the importance of developing innovative management models capable of ensuring the effective functioning of complex socio-economic systems is increasing.

An essential place in all links and management processes belongs to control, which coordinates the work of individual subsystems of a control chain and makes it possible to identify reserves for the rational use of production resources.

The need to improve management control is especially relevant for big enterprises with a high level of separation of management processes, where the coordinated and successful work of various departments of the company has a special importance. The effective management control system in such companies is designed to ensure the effectiveness of management decisions for developing their internal potential and implementing business strategies. In modern business conditions building such a management control system is becoming an imperative.

2. Brief Literature Review

A wide range of foreign and Russian scientists have been studying the problems of theory and practice of management control implementing and the directions of its further development.

The works of foreign authors present the theoretical and methodological background to management control, namely: L. Gulick and L. Urwick (2005); F. W. Taylor (1911); N.-G. Olve et al. (2000);

H. Fayol (1917); R. N. Anthony (1993, 2007); M. A. Abernethy and P. Brownell (1997); A. A. Arens and J. K. Loebbecke (1997); R. Strank (1983).

In-depth studies provided the development of theoretical and methodological approaches to organizing and executing of management control were carried out in the works of a number of Russian scientists, to name a few: V. V. Burtsev (2000); B. S. Efremov and E. V. Kalygina (2019); R. I. Kapelyushnikov (2016); A. N. Kozyrin (2014); L. G. Makarova (2000).

Some interesting theoretical and empirical studies of company's management systems can be distinguished in the modern economic literature.

In particular, new approaches to management control system organizing at the modern enterprises taking into account behavioural characteristics of their employees were proposed by T. Malmi and D. A. Brown (2008), A. Ferreira and D. Otley (2009).

Institutional aspects of management control organizing and implementing are considered in the proceedings of U. Schäffer, E. Strauss, C. Zecher (2015); B. Voußem, U. Schäffer and D. Schweizer (2015); Z. Helsen, N. Lybaert, T. Steijvers, R. Orens and J. Dekker (2017); R. H. Chenhall (2003); V. S. Efremov and E. V. Kalygina (2019); R. Simons (1995).

The correlation between tactical mechanisms and strategic management objectives is disclosed by K. Simmonds (1981, cit. by M. Tyles, 2011); R. Kober, J. Ng and B. J. Paul (2007).

Empirical studies of the management control system effectiveness in the organizations of various types were carried out by A. I. Hasanudin et al. (2019); M. Carlsson-Wall, K. Kraus and L. Karlsson (2017); M. Hosoda and K. Suzuki (2015); M. Hosoda (2018), M. Carlsson-Wall, K. Kraus and M. Messner (2016); M. Quinn et al. (2018).

Despite wide scientific contribution, the coverage of management control organizing and implementing in relation to big enterprises is not exhaustive due to the dynamism of the field.

In this regard, additional research is currently required to ensure the improvement of organizational and methodological support of management control in management system of big companies.

3. The purpose of the paper is to systemize the organizational problems of management control at modern big enterprises and develop proposals for its improvement based on modern approaches to management, technological development opportunities, considering the features of functioning of such companies in Russia and abroad with the practical example.

4. Results

Currently, world and Russian practice shows the necessity to introduce flexible models of management control, taking into account the characteristics and dynamics of the internal and external environment.

Since modern big enterprises have a significant impact on the processes of economic development in Russia and in other countries, therefore, they are of particular interest for the research. In some cases, such enterprises play a key role in the development of individual industries and services.

Management control system at big enterprises is formed by a set of interrelated bodies and internal monitoring procedures, processing and analysis of operations, assessment and prevention of possible business risks.

The study of business processes at the big Russian and foreign enterprises made it possible to identify a complex of main problems in organizing and implementing a management control in relation to providing strategic and tactical goals and objectives in the most effective way.

First of all, a large number of departments at big enterprises exercising control powers and implementing various measures complicate coordination among them; it leads to duplication of work being carried out and causes additional costs.

A higher level of personal responsibility for management decisions leads to an increase of formalized procedures, as a result, a significant increase in the time taken to make decisions due to a fuzzy distribution of responsibility.

Objectivity and independence of the departments exercising management control are the most difficult-to-implement in practice functional qualities. In this regard, significant organizational efforts are required to obtain reliable operational data and reports at each level of responsibility.

Incorrect interpretation of job instructions by employees, misconduct, workplace conflicts and other similar factors may cause distortion of the reporting documents. Moreover, in the big

enterprises, the consequences of such distortion may not be detected for a long time and lead to significant losses.

A different understanding of the ways to accomplish a task by managers of the same job level in a big company also negatively affects the results of its solution.

The identified main problems in functioning and management of big enterprises provide the executive staff of such companies with the opportunity to formulate priority areas for improving the management control system. Our research takes into account the characteristics of the management structure of a big enterprise (size, nature of relationships, level of adaptability for individual projects and programmes), the need to coordinate the goals and objectives of departments, etc.

The study proves that the development of a management control system at modern big enterprises should include establishment and maintenance of the departments monitoring a management control system. This will reveal significant aspects affecting the reliability of the control system, develop and implement effective control procedures, minimize or eliminate business risks.

It should be noted that the use of advanced information technology in big companies contributes to the continuous expansion of the opportunities for the efficient adoption of effective management decisions. The choice of a certain information system to automate management control at the enterprise depends on particular characteristics of the company, its goals and objectives. At the same time, the study results have shown that in Russia and overseas the information systems used for management control have long been based on the automation of individual elements of the control mechanism.

They integrated internal and external information of companies (information systems MRP, ERP, CRM, SCM, etc.). However, the use of such technologies did not allow automating many management processes in big enterprises.

Currently, Workflow technology is one of the promising technologies for implementation of management control at big enterprises. This technology allows using a set of procedures and rules to organize the transfer of information and data in a structured form among company employees to perform appropriate actions. As a result, different target groups (executive staff, managers of different levels, and other employees) are given the opportunity to determine the priority of tasks within their authority, balance the workload, reallocate resources and perform other actions aimed at company's efficiency increasing.

The use of information systems for management control contributes to the systematization and coordination of management processes and their optimization. In addition, it is possible to integrate such systems with other automated enterprise management systems. According to this principle, for example, the PPM (Process Performance Manager) management system operates. PPM measures and evaluates the progress of various business operations at the departments' level, warns of deviations from specified parameters, etc.

Recently, blockchain technology got widespread use in Russia and abroad. This technology is a continuous sequential chain of blocks formed according to certain rules and operating at all levels of organizational structure, it can be effectively implemented in the management control system at big enterprises.

The database is simultaneously stored on many computers and synchronized in accordance with certain rules, it allows providing the required level of data protection and promptness of their update. The study results show that the use of this technology allows you to improve service quality, accelerate and optimize the investing process for the logistics infrastructure development, improve coordination among the company's departments by avoiding inefficient operations, automate economic and financial actions, conduct operational verification of the reliability of information at all levels of management.

Based on the study of various information systems implementing, approaches in the field of management control at the big Russian and foreign enterprises and the potential of blockchain technology, the authors developed a multi-block model of management control (Table 1).

The proposed blockchain technology was developed for Joint Stock Company Russian Post. This company was included in the List of Strategic Enterprises in 2013. In 2015, it was in the list of systemic enterprises of the Russian Federation. Currently, Russian Post is a natural monopolist providing postal services in the Russian market where its share reached 67% in 2017. Russian Post has 90 branches and separate divisions.

Table 1:
Variable five-block smart-model of management control at enterprises with public participation

Occupation Group (Type of Employees)	Task	Stage of Accomplishment	Assessment of Work Performance, score*	Analysis of Accomplishment
Managerial staff (managers, specialists, servicing staff)	Depending on the category of employees (basic, initiative)	Task is accomplished	1	Remuneration, feedback on performance, setting a new task
Production workers (core production workers, auxiliary production workers, junior service staff)		Task is not accomplished	0	Analysis of the reasons for impossibility of fulfilment or non-fulfilment, financial penalty, recommendations for adjusting the direction of professional development
		Assistance is needed to accomplish the task (including additional resources: time, information, etc.)	0.3	Analysis of reasons, evaluation of additional resources, monitoring of task fulfilment
		Delegating the task to another employee due to internal or external reasons	0	Calculation of coefficient of the employee's performance
		Task relevance is lost due to internal (far too long task fulfilment) or external reasons (under executive staff's amendment)	0	Calculation of coefficient of the employee's performance

Note:* The value may vary according to the decision of the executive manager depending on the category of employee, type of task. Assessment criteria are also developed by the executive staff.

Source: Developed by the authors

The variable five-block smart-model of management control is based on the following blocks:

- Occupation Group (Type of Employees);
- Task (tasks that must be accomplished);
- Stage of Accomplishment (tasks that are in the solving process);
- Assessment of Work Performance (accomplished tasks with the achieved results and evaluation results);
- Analysis of Accomplishment (analysis of task results).

These blocks are combined on the basis of blockchain technology into a single system - a software package.

The category «Occupation Group» can be formed according to the company specialization. For example, it is possible to use the following classification: managerial staff (managers, specialists, servicing staff), production workers (primary production workers, auxiliary production workers, and junior service staff).

The block «Task» contains information about tasks set, including the expected timelines, implementation indicators, as well as principles and approaches to the implementation of control procedures.

Tasks can be set on the basis of required qualification: basic (mandatory to perform in accordance with employment position instructions); initiative (proposed by employees aimed at developing company's activities and approved by executive staff).

The block «Stage of Accomplishment» is needed for an effective exchange of information between executive staff and employees, excluding excessive control mechanisms.

Task progress is monitored using software package, access of departments and company branches to this software is regulated at the level of executive team.

In this block you can select such options as «Task is accomplished», «Task is not accomplished», «Assistance is needed to accomplish the task (including additional resources: time, information, etc.)», «Delegating the task to another employee due to internal or external reasons», «Task relevance is lost due to internal (far too long task fulfilment) or external reasons (under executive staff's amendment)», and others.

The block «Assessment of Work Performance» includes the score earned by each employee or department based on the results of their performance.

The block «Analysis of Accomplishment» requires serious analytical work at the level of executive staff, including: developing a system of employee's contribution assessment on the basis of earned points for job performance (remuneration, financial penalty, recommendations for adjusting

the direction of professional development); analysis of work proposals for improving business process from employees and departments based on the experience gained in solving problems.

For example, you can identify the following options: «Remuneration, feedback on performance, setting a new task», «Analysis of the reasons for impossibility of fulfilment or non-fulfilment, financial penalty, recommendations for adjusting the direction of professional development», «Analysis of reasons, evaluation of additional resources, monitoring of task fulfilment», «Calculation of coefficient of the employee's performance» and others.

In turn, the blockchain technology provides the so-called adaptive regulation of the work at a big enterprise: avoiding redundant functions of departments, optimizing employee's responsibilities, and the ability to improve staff motivation. This approach is achieved through continuous improvement of the algorithms.

The proposed model is variable and allows you quickly change the parameters in terms of category of employees, level and type of task setting, assessment of tasks implementation, methods for calculating the components of motivation, and reporting.

In addition, the software package of this model can be successfully integrated into existing and actively used in practice in some big enterprises information systems for monitoring the achievement of the organization's development goals and resource costs. For example, we are talking about such web services and task management software suites as Any.DO, Doit.im, Evernote, Habitica, Maxdone, Things, PrettyTasks, TickTick, Todoist, LeaderTask, Wunderlist, etc. Initial studies of such services have been undertaken by us earlier (see: Nosachevsky, 2019)

The problems of development and implementation of management control at modern big enterprises identified by the study have set a list of recommendations aimed at solving the following main tasks.

1. The task of coordinating the activities of various departments exercising control powers at the big company can be implemented by creating comfortable psychological conditions for the functioning of the management control system; systematic personnel training in developing the management control system; the use of strategic management accounting methods for information support of the company's development perspective; organizational and regulatory improvement of control procedures; regular assessment of management control effectiveness; arrangement and control of competent performance of employees, etc.
2. The task of improving project efficiency in the big companies can be solved by ensuring the adoption of management decisions on the projects implementation and development programmes in view of analysis of their commercial effectiveness, possible economic risks, developing alternative options for using funds, etc.
3. The task of ensuring the objectivity and independence of departments responsible for management control can be solved through the operational improvement of local regulations and instructions related to operation of management control system in terms of changes of internal and external conditions (provisions on internal control, audit, risk management and etc.); introduction of information systems, software systems based on blockchain technology, in order to improve the quality of analytical work, internal control; distribution of responsibility among departments in relation to control procedures in such a way as to guarantee independence from each other for such processes as preparation and control, verification of the control effectiveness; involvement of external experts and auditors; ensuring internal rotation of controlling entities to increase the objectivity of control procedures, etc.
4. The task of increasing the effectiveness of decision-making results due to the lack of innovative competencies among employees can be solved by improving the recruitment policy; development of the personnel potential of the company (building an individual trajectory of professional development of employees based on the results of implementation of motivational components in variable multi-block model proposed by the authors, acquiring innovative competencies demanded by the organization, etc.); professional team-building training for innovative projects implementation (employees adaptation to search for advanced problem solutions in the face of uncertainty, the development of creative thinking of employees), etc.

5. Conclusion

The systematized problems of organizing and implementation of management control in the modern big enterprises have made it possible to identify perspective ways for their solution.

Particularities of the big modern enterprises, including a clear hierarchy of organizational structure, relatively high responsibility of officials, the presence of a set of internal regulations for accomplishing

tasks, can successfully use blockchain technology in managing them. In this regard, the research proposes a variable five-block smart-model of management control at such enterprises.

Implementation of this model allows well-timed identification and minimization of unreasonable expenses, redistributing responsibilities among employees and departments, implementing measures to improve labour productivity, increase the quality of management control and, as a result, the efficiency of the enterprise.

The software package of this model can be successfully integrated into existing and actively used in practice in some big enterprises information systems for monitoring the achievement of the organization's development goals and resource costs.

The developed blockchain technology has allowed Joint Stock Company Russian Post to improve the quality of services and coordination between company's regional branches by avoiding inefficient operations, automate economic and financial actions, conduct operational verification of the reliability of information at all levels of executive staff. It can therefore be concluded that the proposed tools are promising in order to improve the organizing of management control in big companies.

In general, the study results prove the prospect of further development of management control in company's management system in terms of enriching the applied aspects of management theory and the possibility of their operational implementation in practice.

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