

## The Role of Information and Information Technology in the Management Control Function

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doi: <http://dx.doi.org/10.13005/bbra/1540>

(Received: 30 October 2014; accepted: 05 December 2014)

A study of socio-economic nature of control is discussed in the article. There are revealed behavioral and managerial aspects of the control function of management in the scientific work. It contains the author's approach to the analysis of control as part of improving information flows of the company. A table comparing the role of information systems are made for the management of the company as a whole and for the control functions in particular. There are presented potential of information technologies to improve the efficiency of the control in the organization.

**Key words:** Management, Control, Information, Efficiency, Technology, System.

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At the present day, the issues of control and economic relations become actual. It is determined by increasing information processes in the context of economic globalization. On these conditions, every company of the world is a competitive market under the influence of large-scale information flows. Not only the subject is changed, but also the products (services) of the firm, the ways of organization of its operations and internal management rules. A special role in building of an efficient management system is known to play the mechanisms of a management control.

In general, the aim of any organization includes transformation of resources for achieving results. The main resources, used by the organization, are human resources, main and circulating capital, technology and information (Mescon *et al.*, 1988).

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The transformation process takes place resources in any organization. Organizations use the funds of shareholders and banks (capital) for the procurement of parts (materials) for the construction of assembly lines (technology) and to pay workers (human resources) for producing goods that they could sell for a profit (results). Information resources are used continuously for communication and coordination of each phase of the conversion process. Information related to market research helps managers to decide what type of products can please consumers. Communication with workers gives them the necessary information to make this task in a high-grade. Speed and volume of sales allow for management to decide how successfully the company works in achieving the desired results. Realizing of the information importance as a kind of resources is the main reason that the company's information processing increases so rapidly. The Information is acquired and distributed in the process of communication (communication) between people (Mescon *et al.*, 1988).

Information is a part of the objective nature of the world realized by the subject and is

liable to transformation. Moreover, the level and degree of understanding is different among the varieties of subjects. Information, conveyed to another subject can have the other meaning, transformed and conveyed in a different way. There are different endless varieties of getting new knowledge from a relatively homogeneous information depending on the quality and extent of information and the organization of the circuit characteristics of subjects, taking part in this circuit. The uniqueness of an innovation, is determined by the complexity and originality of the information circuits, each time different and more unique from the previous ones, created in and around the innovation process. Economists say that the market creates an environment, in the result of an interaction between the subjects becomes new knowledge, that is in a superior position than every individual participant (Hayek, 2008). That is why in the innovation business, where the knowledge is capitalized, it is important to provide intercircularity of an information. It allows to understand better the physical process and provide a growth of knowledge. It is possible only in active interaction of the subject and information, providing a constant growing process. And it is necessary to create a free, not regulated by the rules beneficial exchange of an information in the process of economic work. Now it is difficult to give an economic explanation to the process of a person reaction, how the selection of the necessary information goes on (Arrow, 2012).

In this case, there is an important task to investigate the role of information and information technology in economic companies and to identify the most effective ways of a control the information flow.

### **Main part**

The concept of controlling instead of traditional control system are introduced which is generally understood as a form of information support management for taking management decisions in Russian leading companies. Diter Khan considers controlling as a tool of integrated planning and control, based on the continuous internal and external information flow (Khan, 1997). Peter Horvath and Roland Gleich believe that controlling is a comprehensive cross-functional management concept, the aim of which is to coordinate planning systems, control and

information systems (Horvath, 2005). Since January 1, 2013 according to Art. 19 of the Federal Law of 12.06.11, # 402-FL "About financial accounting" each accounting entity is obliged to carry out fixed internal control (audit) of processes of financial accounting and accepted by owners or hired managers of management decisions regarding their compliance to accounting policy of the entity, to other internal and external regulatory legal acts.

In modern literature control is mainly considered as process of ensuring achievement by the organization of the purposes (Drucker, 1964). The monitoring function is necessary for the effective management of socio-economic systems in conditions of limited resources and possible opportunistic actions of the staff. Monitoring is an integral part and one of the main functions of management, that contained in a constant and systematic tracking of objects and processes for compliance with state and behavior (results) policy management system of the organization and the current legislation. According Kh.Sh. Mullakhmetov, the role of control as the basic management functions in modern conditions is still underestimated (Mullakhmetov, 2013).

Control is a part of the individual behavior sphere and the activity organizations, public and socio-economic processes. At people, control is associated with variety definitions: for ones is accounting, order and predictability, for others - a fighting against abuse and punitive-normative activity. Sometimes, talking about control, connect it with the control and power.

One of the main problems of the control is to perform production tasks (driving under the program from the initial development of the enterprise to the planned indicators of economic activity). In other words, we only get that we control.

Control, as a subsystem of the organization, includes all the characteristics of its system: thus, the state control subsystem is largely determined by the characteristics of the control system. Philosophy and culture of the organization determine its policies, culture and management style. Management style dictates the level of centralization (decentralization) and the control, respectively, control strategies: methods, forms and volumes of control procedures and technologies

they use - the higher the level of centralization, the stricter is control procedures, more volume control, and vice versa.

We can distinguish managerial and behavioral aspects of control. As the behavioral aspects are revealed:

- a) restriction of liberty, an obstacle in achievement of personal aims - resistance to the control;
- b) the desire to maintain an established order of things and arranging - the desire to maintain control over the situation;
- c) power, i.e. the ability to provide the necessary human behavior (set discipline).

As the behavioral aspects of control are revealed:

- a) the basic function of management, tightly connected with other functions.
- v) a tool for identifying of problems and preventing them in early level
- c) an indicator of the openness level, investment attractiveness and corporate governance
- d) power, i.e. an opportunity to achieve their aims through the management of people

As we can see, the resistance to control appears from the very nature of people as a psycho-physiological substances. L. Mullins believes that the primary reaction of the people to the control of their activity is resistance as they assess control, as an obstacle for achieving their own aims (Mullins, 2003).

Degree of resistance personnel control depends on the nature of the control system, and the personal characteristics of employees affected by it. For example, E.E. Louler believes that resistance of a monitoring system is mostly discussed in the following cases (Lawler, 1976):

- a) control system limits the expansion of services;
- b) control system replaces the existing system, in creation of which people made a lot of effort;
- c) used evaluation criteria established without the participation of workers;
- d) the results of monitoring are not reported to staff, efficiency of which are estimated in this case;
- e) data control system, sent to the director gets encouragement;

- f) employees whose work gets into the sphere of control, relatively satisfied with the status of work and consider themselves fully devoted to the aims of an organization;
- g) employees who have tight connection with the control system, are lack of self-respect and self-confidence.

According to the results there is a positioning control of the staff, according to objectives and aims of the organization and its subsidiaries:

- a) positive rating: gives confidence in the action.
- b) negative rating - shows the lack of its shortcomings and omissions, existing reserves for improving performance, creating training effect.

As a result, you can make the following table, revealing the role of the properties of information for system management in general and in particular, for control functions (Table 1).

We should consider issues of "physical" (documentary) forming of a system control of information flows as a subsystem of enterprise management (Kirichenko, 2013).

Internal information control - an important part of modern management system, which allows to achieve the goals of the owners, with minimal costs.

The aim of management information system (MIS) is to handle the flow of information, so that the administration could make effective decisions and successfully conduct business organization (Mescon *et al.*, 1988).

A lot definitions of MIS were suggested, which has led to considerable confusion and misunderstanding. Here information management system is defined as a formal system for issuing administration information, necessary for taking decisions (Mescon *et al.*, 1988).

MIS should provide information about the past, present and anticipated future. It must monitor all works going on within and out organization. The common task of MIS is to release effective planning, control and production activities. The most important task is to issue it the right information to the right people at the right moment (Mescon *et al.*, 1988).

To understand what the MIS, you must know what it is not. Let's start with the fact that

**Table 1.** The value of information for the management and control

Property for information	Value for management	Value for control
Reliability	Reliable information helps to get (but not always guaranteed) better decisions. It is advisable to use control, check out and analyses in management for defining if the information true or false	When comparing the desired state of the actual, reliable information about the current state allows to judge whether the objective of the organization are achieved or not.
Completeness	The property of information completeness for management is a favorable factor for making decision. It is difficult to rely on the incomplete information.	This feature information is related with property depth (thoroughness) control. Careful monitoring allows you to get more information. Surface control is fraught with erroneous judgments about the state of the control object.
Accuracy	Accuracy of information is one of the most important properties , nearly for all management functions, as far as management often has to deal with uncertainty. The more accurate - the less uncertainty is.	Accuracy of information is determined by the degree of closeness of the received information to the real state of the controlled object, process, phenomenon, etc.
Value	The value of information is determined by the degree of its usefulness for the owner. For management, it can be assumed, the value is the information that best eliminates uncertainty. In management value consists of an information, that helps to take true decisions.	The information, which reflects the condition of a control object will be more valuable for controllers. Objective information about the test object is valuable for managers and owners of the organization.
timeliness	Timeliness means receiving no later than the fixed time, agreed with the time for making a decision.	In procedure of control the quality of information timeliness determines the correspondence with the time of conducting control procedures in fixed time.
intelligibility	Clear - clear information, if it is interpreted in the language, easy to understand for receiver. It is advisable to take experts for an interpretation of a complicated information for understanding an information from a special branch knowledge for managers. In this case an expert has a role of an information transformer for giving a quality of intelligibility.	Understandability of accounting information requires quite naturally from a particular user a certain minimum of special knowledge of accounting, finance, some other economic disciplines. Consequently, the controllers must be experienced in this sphere, close to the specific work of a controlled object.
availability	Simplicity of an information is very important for sharp taking decisions. Often not all the necessary information is available for managers. Most of the information, upon which decisions are made every day, turns out informally.	Availability of information is a property that characterizes the ability of consumers .In the process of control, controllers should embed to the courses of an information company ( reports, documentation etc) Anyway it becomes complicated to make an objective conclusion about the condition of an object control.
brevity	The brevity of an information is necessary to save time (managers) for rapid analysis and making appropriate, timely decisions.	The brevity of an information allows to make a conclusion in a quick way about actual state of a control object.

MIS is not only comprehensive integrated system to please all the needs of the administration in the information. As far as u may want to get the system like this, we should remind, because of big obstacles in real organizations, we have small hope to create it. MIS consists of a number of information systems, each of which serves to make decisions in a particular area (Mescon *et al.*, 1988).

The second incorrect assumption is that MIS invariably involves the use of computers. Indeed, recent advances in the field of data processing technology have made an enormous contribution to the development of information management systems. Some types of MIS would have been impossible without the speed and accuracy of data that give computers. However, the aims of management demanded and information, and the system for obtaining long before computers were invented. Weekly report on sales, market research, daily news, which prepares the CIA for the president, reports from the inspectors of simple machines, as well as being prepared with the help of a computer review of quarterly sales in the major sectors of the economy, higher administration used by "American Telephone and Telegraph" - are all examples of the MIS application (Mescon *et al.*, 1988).

Steps to create a system of internal control information may include the following:

1. Decision on the establishment of the internal control system.
2. Development of the concept of an internal control system, including information about its physical parameters (scale, timing, placement), description of the main controlled business processes, control mechanisms themselves (punishment for violating them) and an array of possible risks from violations.
3. Drafting regulations functioning of key business processes, taking into consideration the covert and overt control mechanisms. It includes all types of activities (operating, investing, financial).
4. Defining responsible for the system of internal control and the wording of their motivational mechanisms, responsibilities, control according to their functions, duties and subordination.
5. Piloting internal control system, consisting

in a phased and gradual implementation of the documented controls in key business processes and training the staff for realizing tasks of a new company subsystem

6. Completion of the internal control mechanisms, both conceptually and in documented and methodical.

For a creating of a simple system of internal control as a subsystem of economic security can create the following divisions:

- a) the department of Inventory control processes;
- b) accounting control department;
- c) the department of control management decisions.

The internal control system is designed to reduce the risk of errors in the enterprise and facts malpractice employees of the firm. Effective control will be enhanced with the appropriate competencies and powers of the head of security. In this regard, it is advisable to use a matrix organization structure of the internal control unit. This implies the occurrence of the security staff (or granting special powers of existing employees) in each department according to the described business processes. Accordingly, it is necessary to bring the information to the staff of the enterprise and to make his supporters of the new system of internal control. It is advisable to connect the actions with the work for reforming the system stimulation labor.

Of course, it is necessary to classify the level of responsibility and functions of internal control proceeding from the status of the staff: the owners, top management, middle management and ordinary employees. Depending on the criterion and according to organizational and managerial hierarchy, it is necessary to build the internal control rules. The preservation of information flows has a great importance, (on internal control including) "top - down" and "bottom - up". It will contribute to the effective functioning of the current responsibilities of personnel by maintaining a "feedback" and at the same time will embed effectively the internal controls into the company's management.

New information technologies bring their risks to the economic security of the enterprise (Vasilev and Akhmetshin, 2014). The internal control system should also take into account these risks.

You need to install control mechanisms (periodic inspection) on compliance with established procedures input and output. Within the framework of the strategy, it is necessary to create check points, based on the balanced scorecard for a particular company (Vasilev *et al.*, 2013). Also using the built in (software) capabilities of modern information technologies can create automatic control elements. It is connected with both – identification and authentication user and automatic termination of the computer, during uncorrect introduction of a data.

### CONCLUSION

The success of the system of internal control information depends entirely on the performance of the overall management system of the enterprise. It is necessary for increasing the level of economic security firm to use all known methods of management. There are primarily the methods of analysis of business processes, their improving and control of the conducting work. But only the efficiency of the internal control information will help to achieve the stated aims of management, to maintain stability and quality of the work, in future to move to a new stage of management development.

Thus, control plays an important role in our daily lives and work. As a source of information, it largely determines decisions as power factor - promotes ordering livelihoods and social processes in a whole. Information technology will allow to realize the function of a control more effectively. Staff resistance control also will decrease if management information system is coordinated with current and strategic objectives of the enterprise. On the other hand, control will allow to improve the quality of information flows, increase their speed, reliability and accuracy.

The scientific article was investigated within the limits of a grant of the Director the branch of Elabuga Institute of Kazan (Volga) Federal University (project name “Application of the

balanced scorecard and managerial control methods for the study of economic security institution”).

### REFERENCES

1. Mescon, M. H., & Albert, M., Management (3rd ed.). New York: Harper & Row, 1988.
2. Hayek, F. A., Quah, D., Baxendale, T., & Salerno, J., Prices and production and other works: F. A. Hayek on money, the business cycle, and the gold standard. Auburn, Alabama: Ludwig von Mises Institute, 2008.
3. Arrow, K., Social Choice and Individual Values (3rd ed.). Yale: Yale University Press, 2012.
4. Khan, D., The planning and control: The conception of control.. Moscow: Moscow: Finance and statistics, 1997.
5. Horvath, V., The conception of control: Management accounting. The system of accounts. Budget.. Moscow: Moscow: Alpina Business Book, 2005.
6. Drucker, P. F. , Managing for results economic task and risk-taking decisions. New York: Harper Business, 1964.
7. Mullakhmetov, Kh. Sh., The influence of a management evolution on the control.. Studgard: Pages of the 4th International scientific conference. Germany, 2013; 176-182.
8. Mullins, L. J., Management and organizational behaviour.. Minsk: Minsk: New Knowledge, 2003.
9. Lawler, E. E., Control Systems in Organizations. New York: Rand McNally, 1976; 1274.
10. Kirichenko, M., The systems of internal control: organization aspects of construction The systems of internal control: organization aspects of construction. Moscow: Finance newspaper, 2013; 11.
11. Vasilev, V. L., & Akhmetshin, E. M., Institutional basement of forming control mechanisms and providing economic security. Saratov : *Economics and Society*, 2014; **2**(11) (Main part #2(11)-2014 Đ<sup>3</sup>).
12. Vasilev, V. L., Akhmetshin, E. M., & Tuktarova, E. M., A Balanced Scorecard and Economic Security of Companies. Moscow: World Applied Sciences Journal, 27 (Education Law Economics Language and Communication), 2013; 424-427.