

Cybernetic Model of Companies' Organisation Structure. Solution of Planning, Coordination and Motivation Problems

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Abstract

The article is focused on adopting a cybernetic approach to construct an organization structure for any typical company. It is aimed at eliminating problems connected with such management functions as planning, coordination and motivation.

***Keywords:** Organization Structures, Systems Thinking, Management Functions, Effective Management.*

Introduction

Nowadays Russian management culture is rather young and it cannot compete with foreign management schools. The root cause of this phenomenon is insufficient formalization of the Russian management school theories. This situation is typical for sciences that are based on foreign theories. This fact also has influence on management practice. Today typical Russian companies have problems related to execution of such management functions as planning (1), coordination (2) and motivation (3).

This paper is devoted to developing a model of cybernetic organizational structure and determining principles that are able to cope with common problems of management functions: planning, coordination and motivation.

The main objectives are:

- To formulate actual management problems in Russia;
- To develop a cybernetic model of companies' organization structure by applying Systems thinking;
- To describe in detail a substructure providing the implementation of coordination and motivation functions.

Main body

Defining typical management problems in Russia

The most actual problems of Russian management are the problem about planning departments' functions and developing job descriptions (1), the problem of coordinating departments within one organization (with

regard to quality management and cost reduction policy) (2), as well as the problem of authoritarian management style (3).

1. The process of planning departments' functions and developing job descriptions is associated with the development of companies' organization structure. Concerning this, linear-functional organization structure is the most typical organization structure for Russian companies. It has several weaknesses, e.g. limitation of linear management authorities, cooperation problems, lack of feedback between different levels of management, and problems connected with information and resource interactions within company's substructures Barinov (2012).

2. Coordination management function is optimization of information and resource interactions between companies' substructures. These processes demand too much managers' resources, therefore this function was delegated to a new division during management evolution process of the advanced countries. So this new division deals with optimization of information and resource interactions between companies' substructures performing functions of logistics in its overall interpretation. According to the official determination of logistics that was formulated and accepted by the First European Congress on Logistics (Berlin, 1974), logistics is movement control of material, information and financial resources in various systems Konovalov (2009).

Today for Russian, American and European management culture, the term "logistics" means the management of the flow of goods between the point of origin and the point of consumption in order to meet some requirements by customers or corporations Raizberg, Lozovskiy & Starodubceva (2007).

Therefore, logistics function, which is aimed at rationalization and optimization of flows between organizations' subsystems, has been lost in present management sphere, so in this context, there are problems of coordination management function in Russian companies.

3. Authoritarian management style, which is typical for most Russian companies, is a serious problem. It has a negative impact primarily on the companies, and only in the second place, it negatively affects companies' staff.

Russian companies are characterized by using the Theory X (referring to Douglas McGregor) in its personnel policy. Nonetheless, low efficiency of personnel policy, such as low staff performance, insufficient job satisfaction, and high employee turnover, forces companies to take action, directed at searching new motivation models.

Classical management school involves implementation of the Authoritarian management style and motivation model that is based on the Theory X. It is worth mentioning that the success of this management style in the USA and European countries in the first half of XX century was caused by low qualification of labor-power, but not by low income of employees. Thus, working on assembly line did not require professional trainings, in-depth knowledge or special skills, since workers received the skills required during the first workweek Henry (2013).

For these reasons, a young well-qualified specialist (who studied for five years at least) with relatively low income will not apply for a job in a company where similar motivation models and management style are adopted.

Developing a cybernetic model of organization structure

The quality of any organization structure depends on simplicity of every single type of interaction between all company's substructures. This approach to organization structure development is aimed at providing optimal communication of separate substructures between themselves.

The basic idea of this theory is “mobile division”. It is companies’ substructure that is characterized by an extremely wide channel of information interaction with external structures. The developed model is based on Systems thinking foundations:

1. While developing a cybernetic model of organization structure systems composition property was applied, which allows us to consider decomposition elements as separate subsystems that have their own internal structure.
2. We also used the principle of priority of functional attributes over structure attributes of the systems. This principle means that new functions necessary for companies compulsory require to establish new organization substructures. We cannot share these new functions among the existing substructures Joseph (2008).

Adopting these approaches, we developed an approximate cybernetic organizational structure model, suitable for various Russian companies. This model is presented in Figure 1. This structure does not have any disadvantages of a typical linear-functional organization structure. It is more like a typical input-output model of the cybernetic system. Malishenko (2008). The arrows, which are shown in Fig. 1, are substructure functions, as well as information and resource flows. The developed cybernetic model of organization structure includes 6 substructures. Each of them contains a control body (at the top-left corner of each subsystem) that is headed by functional executive.

Therefore, this cybernetic model has the following features:

1. It does not contain the description of the production department, because its structure can be different, depending on companies occupation.
2. There is a substructure of legal relationships, which is a multipurpose department of law support.
3. There is a subsystem for optimizing information and resource flows performing coordination management function (2).
4. The human resource substructure has the following functions: development of a complex system of financial and non-financial motivations, planning of career development, planning of social insurance/ services, staff retraining and recruitment, staff competences and work quality control, as well as providing personnel with informing channel (3).
5. All head functional executives that are headed by the chief executive officer form a company’s headquarter.

The information and resource flows optimization substructure

This substructure (Fig. 1) provides coordination management function ensuring the high quality of information and resource interaction of all company substructures between themselves. The information and resource flows optimization substructure has the following aims:

- Search and elimination of material and time costs; planning, rationalization and optimization of business processes;
- Feedback supervising; acceptance of business process optimization projects, that are brought forward by employees;
- Interaction with the Innovations fund control department for providing financial analyses of optimization projects;
- Technical implementation of the information system for employees.

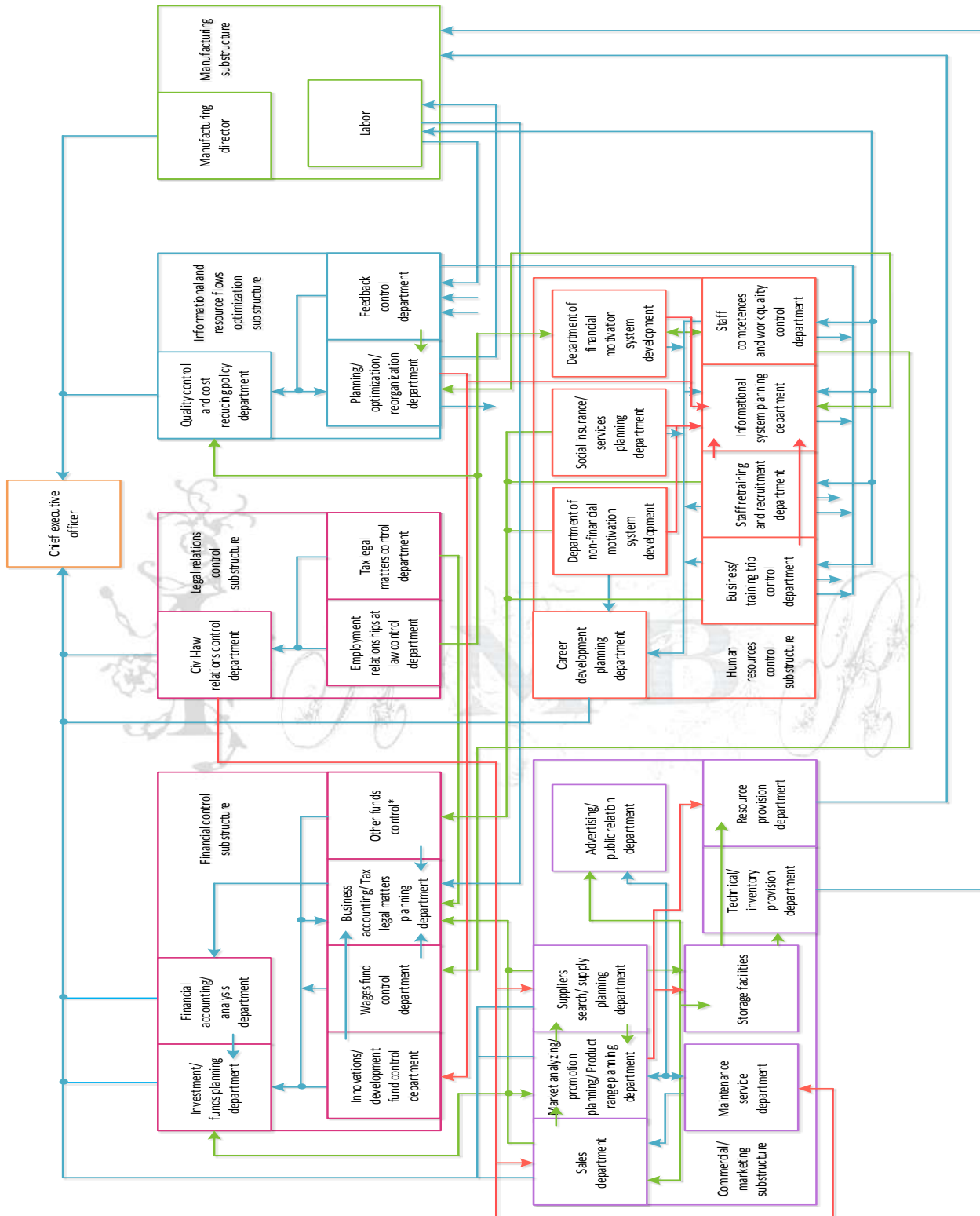


Fig. 1: Cybernetic model of companies' organization structure

The Human Resources Control Substructure

Russian companies have been interested in progressive motivation models that retreat from the authoritarian management principles. However, for some reasons the application of similar models rarely produce positive results. Reasons of these problems are as follows: progressive models of motivation may produce positive results only when companies have an organization structure similar to the structure that is described in this article (Fig. 1).

Its model includes the human resources control department, which core function is development and implementation of company personnel policy, particularly by applying new labor incentive mechanisms. Let us consider the activities of the planned substructure in detail:

1. Financial motivation mechanism means a flexible system of labor compensation, considering employee's qualification, length of service, production specificity, job combination, overtime work, and certainly modernization (optimization) of production or business processes activity.
2. The staff competences and work quality control department interacts with the feedback control department (part of the information and resource flows optimization substructure) (4) for implementing a work quality control process. The wages fund control department for running payroll calculations properly uses the results of work quality control processes. Therefore, it is necessary to calculate right compensations for business process optimization projects that are brought forward by employees.
3. The Information system planning department provides the publicity of actual information about processes that occur in the company. Its aim is to select public content which is valuable for workers' competences and skills cultivation. The innovations/ development fund control department offers financial resources required for these aims.
4. Due to the Feedback control department (4), workers may participate in management by implementing their project of modernization or optimization of business or production processes. It denotes that the participative management principle is adopted in the company.
5. The Career development planning department is responsible for realizing workers' rotation, according to actual information that is collected by this substructure.
6. Other types of motivation are planned and implemented similarly to the procedures mentioned above.

Conclusion

Problems with planning management function are primary causes of other Russian management problems. So, particularly motivation and coordination problems are derived problems. Their elimination depends on preliminary solution of planning problems.

A cybernetic model of organization structure may affect different companies' indicators in a positive way, for example:

- To promote the detailed development of job descriptions in the company;
- To simplify the processes of planning and modeling business processes;
- To increase the flexibility and mobility of the organization structures, that allows companies to adapt to Russian erratic environmental conditions;
- To optimize the interaction between organization substructures reducing different kinds of transaction costs and indirectly improving product and performance quality;

- To offer prospects to evolve further since company's evolution is possible only when substructures' interactions are perfect and effective;
- To favor the development of personnel competences on the whole;
- To provide a well-organized personnel policy and advantageous working conditions;
- To increase employees' motivation for labor.

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