The peculiarities of process-based approach realization in transport sector company management

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Abstract. In the present article we study the phenomena of multiple meaning in understanding process-based management method in construction of transport infrastructure facilities. The idea of multiple meaning is in distortions which appear during reception of the management process paradigm in organizational environment of transport sector. The cause of distortion in process management is organizational resistance. The distortions of management processes are discovered at the level of diffusion among spheres of responsibility, collision in forms of functional, project and process interaction between the owner of the process and its participants. The level of distortion is affected by the attitude towards the result of work which means that process understanding of the result is replaced by the functional one in practice of management. This transfiguration is the consequence of regressive defensive mechanisms of the organizational environment. On the base of experience of forming process management in construction of transport infrastructure facilities company of the issues of diagnostics of various forms of organizational resistance and ways of reducing the destructive influence on managing processes are reviewed.

1. Introduction

Process-based approach in administrating any business structure is one of the most sensible decisions for reaching the efficient and effective work [1]. However, if we consider the definition of the process-based approach to management in contemporary business environment, we can’t get a definite answer [2,3,4]. Various interpretations of what is meant by the process-based management approach in contemporary management paradigm is mostly a misapprehension [5]. The results of analysing the feedback of the process-based approach realization in engineering companies distinctly shows that the introjection of the conceptual meaning of the term process management collides into the resistance of business environment. So we can observe many distortions in defining this term.

Every business environment has both typical features (for the current stage of development) and unique characteristics which depend on the differences in formation and development of any organization [6]. Consequently, organizational resistance to changes will vary according to these individual and unique characteristics [7]. Switch to the process management efficiently affects the state of the organizational environment as the responsive resistance to the changes becomes greatly intensive. The inevitable consequence becomes multiple meaning in understanding the essence of process management. In this situation the problem of absence of systematic idea about process-based approach is distinctly observed.
Actually, by the present moment there hasn’t been done the description of the system *process-based approach to management*, which would satisfy the following criteria and would be:
- structured and understandable;
- reflecting the real idea of management;
- accepted by the business environment in undistorted form;
- transmitted with conceptual certainty.

The aim of the article, considering the peculiarities of realization of process-based method in management is the search of ways of description of process-based approach as a system. The starting point in this search will be consideration of what is meant by the method of management. Obviously, method of management in contemporary business sphere is the way of duty delegation and making zones of responsibility. If we address the classification of the ways to realize a administrative function, there are 3 main trends here:
- functional;
- projective;
- process.

In its turn, projective method of management, which is based on the principle of uniqueness of the result of the work and corresponding planning and realization of production-management cycle, is considered to be more effective than applying functional principle [8]. Projective way of management delegates the responsibility for the result to the project leader, while the project team, headed by the leader, are working out the activity in two forms: the unique one and stereotyped one [9]. The unique form refers to characteristics of the result of the project team’s work, while stereotyped one – to the realization of the project itself. Meanwhile, project realization has functional character. From the point of view of making the system of the activity, such way seems to be most appropriate, however, its total realization, if applied, requires significant expenses for providing project management, which may turn out to be economically unpractical.

2. Methods
Functional method has been widely applied to business practice. Not a single large company can do without organizational structuring where functional aspect is usually used. Actually, to realize management through functions is logical, understandable and is absolutely accepted by business environment. In engineering industry management according to uniting similar types of activity is quite effective: many large engineering companies are structured by functional characteristic.

Presently there are many different classifications of business processes. Companies tend to use only two of them. According to the first classification there are the following business processes:
- processes of the basic activity;
- processes of consequential activity;
- processes of additional activity;
- processes of providing activity;
- administrative processes;
- processes of development.

The second classification doesn’t contain an alternative way of realization of process management and, literally, represents itself as an enlarge variant of the first classification, including three types of processes:
- basic processes;
- additional processes;
- administrative processes.

Of course, ranges of business processes used are not limited by these two classifications mentioned. Industrial peculiarities, types of activities, conditions of the outside environment where business activity takes place and many other things affect. The main criteria to choose this or that classification is to what extent this classification would enable to set the system of business processes properly.

In the case reviewed where the process management has been applied the second classification has been chosen due to following arguments:
- by studying the best practices of applying process management the conclusion is that specification of business processes which don’t refer to the main type of activity, depends on in what way the zones of responsibility has been formed in these processes before engineering;
- by analyzing the results organization activity before accomplishing events of engineering business processes, total effectiveness of the whole range of processes which don’t refer to the main type of activity;
- intensity of effective inside communications in the sphere of additional processes is higher than between main and additional processes.

Let us illustrate the systematic character of process approach at the example of construction company N, which accounts for about 300 people. This firm builds country-houses in Leningrad Region and, besides, sells them. If maximum effectiveness of sales is considered a priority, then sellers should be able to operate many variants of project decisions, a wide range of proposals, to meet customers’ demands at maximum. According to studies of potential customers’ demands of this section of real estate, the variety of project decisions is a priority. However, from the point of view of construction activity itself, the situation turns out to be the opposite: the less the number of project decisions and constructions of similar houses is, the more effective business would be, as project variety increases the level of expenses. The most preferable decision is to find a compromise: construction and sales of several types of houses from the number of the most popular projects. The search for the appropriate number of projects, represented by the company at the market, which would go with the efficient sales, is the simplest model of business processes setting.

Let us give an example of the importance of selecting the most appropriate classification. Personnel management can be referred to both management processes and additional processes. If personnel management occupies the place of inner business partner, then the attribution of such so-to-say additional processes like stuff recruitment and personnel training and, more then that, motivation to management processes can be approved.

3. Results
Analysis of business processes has been performed in the company ‘ZAO PSO LENOBLASTROY’. This organization has existed since 1996. The main type of activity is constructing residential and non-residential units. Modeling of business processes has been performed in the following way:
- management business processes;
- business processes of the basic activity;
- providing business processes.

Management business processes involves the following:
1. “Strategic management”. This business process is universal. In any company there is such a management item as “strategy” and this item needs to be administered. Strategy should be planned, realized and controlled. Therefore, management business process called as “strategic management” is required. In the group of management business processes “Strategic management” is a source of other administrative processes.
2. “Financial management”. It is the first business process that comes from “Strategic management”. The main goal of financial management is an ability to answer several questions: how much, what and how to receive and spend.
3. “Marketing administration”. It is the next business process, coming from “Strategic management”. One of the most necessary and difficult goal of any construction firm is a search and keeping a customer.
4. “Personnel management”. A driving force of any enterprise is staff. In construction industry staff’s competencies have to be oriented at the type of organizational activity.
5. “Quality control”. In a construction firm the word ‘quality’ means high-quality constructing. In its turn, high-quality constructing is supported by developed standards of work and doesn’t directly depends on competencies of staff who work on a building site.
6. Administration of project case. This business process plays an important role in the work of a construction firm. What is interesting is project development can be included into both main
and separate type of work. In other words, the construction company reviewed can earn not only by constructing but also by designing customized projects. But it is not productive enough to correlate this process with the additional work, as a common zone of responsibility has been formed already. Originally, we planned to consider this process as a separate group. However, after analyzing the zones of responsibility and organizational interaction, we’ve come to the conclusion that in this company project development is considered to be one of the factors in construction firm management. In its turn, it allowed to refer “Administration of project case” to the category of management business processes.

Let us come to the next group of business processes of basic work. This group is directly connected with construction – the main type of company’s work. As sequence is typical for all construction works, process hierarchy has been made in this group of business processes.

The first branch of this hierarchy will be project development. The project actually is the base of further work at a construction site. Making the project plays an important role in construction. Errors in this type of work are impossible and it is necessary to minimize the possibility of wrong design project, for example, of a storey in an industrial building because, in this case, other levels should be redesigned. And it means great expenses for the construction company.

When the project is totally confirmed between the customer and the construction firm, building preparation starts. It involves preparing the construction site, start of delivering materials, fencing the site, etc. Stages of building preparation are interconnected and go to construction itself. Project development is considered to be a separate goal and will be reviewed by me in following articles. Let us note the fact: this business process can contain simultaneous coordination of possible changes with the customer. These changes could be suggested by both the company and the customer.

Let us review the next group of business processes. This group of providing processes we’ve referred those, which are vitally necessary for the main type of activity. Such business processes can represent themselves: kinds of services, streams of information, and also resources that the enterprise needs. That’s why in practice we didn’t use the term “business” conventionally. In ZAO PSO LENOBLSSTROY administration and facilities are the most central. They contain a wide range of processes which have been studied in detail.

First and foremost, it is utility support and keeping in appropriate order according to rules and regulations of production sanitation and fire protection system of administrative building and premises. Construction company won’t be successful if it doesn’t look after and doesn’t keep an appropriate state of its main means. It was especially noted in engineering.

Providing business processes, in our classification, involve the process “IT-provision and communication service. Let us consider IT-provision first. It has been attributed to project development. Modern equipment allows to make projects with the help of special programs, used in the company, such as AUTOCAD and NANOCAD. Setting and work in these programs should be performed on up-to-date and high-efficiency computers as it was mentioned before, project development is one of the most important processes in construction industry.

Communication is an important factor of effective activity both at a construction site and outside it. Let us consider a few typical cases that show a necessity in forming a subordinate communication process. A following situation is the most typical one. An end of a working day at a construction site, but workers do not start putting special vehicles away. The reason is that reinforced columns should have been delivered to the site during the day and had to be placed inside the construction pit. A truck that should have delivered the columns got broken on the way. The driver could not inform the site about the breakage, because his phone number was blocked. The situation seems to be of little importance, even ridiculous, but a real problem is that the driver does not have opportunity to immediately communicate with the site. This results in the workers spending fuel on the special vehicles functioning. They get overtime pay, and the company has to bear additional expenses on the payroll. The amount of idle time thus depends on the driver and his ability to quickly connect with the site. Let us continue analyzing the case that turned out to be a frequent situation at the company. Next time the driver was able to connect with the site and inform it about the breakage. The workers did not waste excessive fuel,
and there was no overtime pay. There is a separate complex dealing with repair of construction equipment in the company. But it is impossible to connect with the man on duty because he, in his turn, happened to turn off sound on his mobile phone. Again, the situation seems even more ridiculous than the previous one. But it also results in the company’s losses, because the truck may be broken in such a way that requires immediate repair. Otherwise its further use will be impossible. Besides, risks of stealing the columns that should be delivered to the site are growing.

As a result, a project of corporative communication and an alerting system was developed, a zone of responsibility was formed, and all the changes in the company’s activity were included in the workers’ job descriptions.

We addressed a simple situation to show a necessity to make this process independent and able to eliminate losses.

Performing construction works related to big rooms or buildings has always been an activity potentially dangerous for health and life. This is why we included safety provision in supporting business processes. What does it mean? It means that depending on a kind of activity at the construction site, a worker must be provided with necessary safety equipment, special clothes, and in particular cases with special vehicles.

It is a frequent case in the company’s activity when all the works have been performed in time, and an ordering party delays payment for the work done or even does not make it. The enterprise spends its money on court procedures due to this and many other reasons.

The legal support business process was singled out within supporting business processes. Legal specialists usually deal with processes belonging to two categories:
- a lawsuit is filed against an ordering party for a partial payment for the work performed or even non-payment;
- a lawsuit is filed against a construction company for the bad quality of works or their no fulfillment within the agreed time frame.

The quality of results of this business process is evident. Financial well-being of both the company’s owners and the whole company is stipulated to a large extent by how these and other issues are solved.

The construction equipment repair business process was separately included in the supporting business processes group. Equipment is a foundation for all kinds of construction works. If a company does not have a certain kind of equipment, it means that it cannot perform certain kinds of works that can be needed for a chosen construction activity. As a rule, it is high costs that are associated with good modern construction equipment. Expenses were reduced due to creating a process that included repair of the equipment used and special vehicles.

Results of the works on implementing process management at ZAO PSO LENOBLSSTROY (a comparison was drawn with the previous financial year performance) are financial performance improvement by 14.7 %. The employees’ satisfaction with working at the company increased by 21 %, the key staff turnover dropped by 7 %. Management competencies were assessed together with business processes modeling and, in their turn, improved by 15.1 %.

4. Discussion

Interpretation of results of business process modeling in ZAO PSO LENOBLSSTROY and assessment of personnel of a few construction companies allow concluding that the functional type of management is not maximally effective for construction companies due to peculiarities of business processes [10]. Functional management makes managers fulfill additional tasks because basic kinds of activity in the construction industry relate to project activity [6,2].

Thus, we face a contradiction: on the one hand, the functional approach to management make top managers overloaded and the activity less effective, on the other, project management requires significant expenses that are not presupposed by the economic feasibility principle.

As it was mentioned above, process management in the construction sphere does not possess a methodological identity [8]. Distortions in understanding the process approach are first of all manifested at the level of classifying business processes. The result of my work is the analysis of an organization’s resistance in terms of classification of business processes in a construction company.
Let us view perspectives of systematic description of process management in the construction sector and analyze why the process approach to management meets an organization’s resistance already at the stage of the model perception. This resistance, in its turn, creates multiple interpretations and distortions in management practice. A business process itself is an activity that turns existing resources into activity results, and powers and responsibility in such a model of management will be delegated and realized through a business process. In my opinion, we can see reasons for an organization’s resistance that results in distortions in implementing process management already when the definition of a business process is formulated.

Personal responsibility can be distinctly tracked in functional or project management. It is delegated to functional or project managers. In case of process management responsibility and powers are delegated through the process, and it stipulates distortions, because individual responsibility seems to be vague in this case. The nature of an organization’s resistance is that we will inevitably face decreased efficiency due to possible shifting of responsibility or even evading it if zones of responsibility are not precisely defined [3]. Thus, it is necessary to clearly and precisely define zones of personal responsibility to reach systematic understanding of process management in the construction sector where the problem of responsibility for the result is quite significant. First of all it relates to defining the owner of the business process and forming his / her zone of responsibility. A comparative study of local regulatory documents (managers’ job descriptions and quality management systems regulations) in ten construction companies showed characteristic contradictions that let making dubious interpretation of powers and zones of responsibility [8].

A process owner realizes his / her management activity with the help of business process participants. Distortions that lead to dubious interpretation of process management are registered at the stage of interaction between a business process owner and a participant. This happens because a participant, besides being subordinated to a business process owner, is also subject to his / her functional boss. If process and functional kinds of management are not synchronized, i.e. if there is no organizational work on their synchronizing and tracking emerging contradictions, such realization of the management function will inevitably result in contradictions and dubious understanding of process management itself. If activity needs to be in the project form, a process participant may get into a situation when he / she is subordinated to three bosses which will require organizational resources for providing and maintaining such interaction at an optimally effective level. Resource insufficiency in supporting business processes can be called a frequent situation in today’s business structures. Specialists in the field of organization design always have to choose ways of optimization and reducing expenses.

Double and all the more triple subordination activates a defense mechanism of regression that affects the quality of object relations in the system boss – subordinate that can take a more complex form in a viewed organizational structure [11]. Thus, we will observe regressive forms of adaptation, because stability of realizing the management function directly depends on an optimal load on object relations in the system [12]. Analysis of organizational sphere in several construction companies conducted within the framework of the management personnel assessment project shows that distortions in the management function and in understanding process management were less explicit in the management configurations that presupposed double subordination than in the structures where a process participant was subordinated to three bosses.

The above allows to conclude that success in realizing process management and making the level of distortions lower will depend on how definitely and unambiguously functional responsibilities of a process owner and participant will be described in terms of subordination. Even small uncertainty in description of the subordination system will lead to distortions.

Having considered regulation issues, let us view how business processes are realized. The process-based method of management started to be used in the 1950s. The basic innovative idea of implementing process management at this time consisted in its application as a system. Optimal work of a whole system does not correlate with optimal work of its subsystems according to this approach. Effective realization of a function is understood as total effectiveness of all business process participants in the context of functional management.
Effectiveness of an activity result is often understood as a maximum of effective activity of every employee engaged in reaching this result. Such a stereotypical situation in an organization can be created because systems thinking is not employed in process management.

It becomes evident that substitution of functional understanding of process management for systematic becomes one more source of distortions. A problem also consists in the fact that competency of systems thinking may not be explicit in the practice of management due to regressive defense reaction in the system boss – subordinate, though it may be shown at the level provided by the profile of an assessed owner’s or process participant’s position.

5. Conclusions
It may be said that the problem of distorted understanding of the process management approach has the following solutions:
- forming definite and unambiguous zones of responsibility;
- solving contradictions between functional and process aspects of management interaction between a process owner and process participants;
- eliciting and correcting substitutions of functional characteristics of an organization’s activity result for process ones;
- analyzing the employed classification of business processes used in a given organizational sphere.

Analysis of the first year results of implementing the process management method at ZAO PSO LENOBLSSTROY shows that the company’s financial performance got better during the period under review, moreover, modeling of business processes influenced positively the organizational climate (meaning employees’ satisfaction with work at the company) and reduced the key staff turnover. Concerning measures related to personnel management as a whole, management competencies of heads of structural divisions and departments of the company considerably improved.

6. References
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