VIRTUAL ORGANIZATION – FUTURE ORGANIZATIONAL TYPE OF REPAIR WORKS COMPANIES

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Abstract. In the world of aggressive economy, rapidly changing market, small enterprises are in difficult situation. They can not compete with big corporations in traditional form. Their opportunity is shift to the new organizational form – to the virtual enterprise. The paper shows the suggestion of management method in a renovation work company based on the so called virtual organization, which links highly specialized units into one strong constitution – which does not have any weak points.

Keywords: process management, virtual organization, virtual corporation, renovation work company

1. Introduction

Intensive economical changes impel organizations (companies) to conduct radical changes, which are necessary to rise to challenges. Introduced organizational changes aim to increase profitability, maintain position on the market, improve competitiveness on the new markets. These changes comprise: creation of interdisciplinary teams, integration of companies, “just in time” logistic systems, flexible production systems, Total Quality Management, reengineering. Application of new informational technologies leads to better informing the market (virtual market). Nowadays computer networks, the internet first of all, are “the carrier” of such companies.

Development of informational and telecommunication technologies created conditions for development of the new forms of business activity. Enterprises which want to adjust quickly to economical changes should be characterized by high flexibility allowing to adjust to present market demands. Classical organizing has to be replaced by specific “disorganizing”, which means resigning from up-to-now rigid organizational structures and creating new highly specialized teams aiming to clients’ demands. As a result the network organizational structures (virtual organizations) are formed based on achievements of modern informational techniques. Virtual organization is a new type of organization, which is often called the organization of the future. It is the answer to free market demands and necessity to adjust to its competitiveness.

2. Features of virtual organization

The word virtual derives from Latin word “virtus”. It means “apparent, not real but (theoretically) possible to exist”. The word virtual can be interpreted as an effect, force which exists but it can not be precisely observed [2]. The essence of the virtual object is the fact that it does not really exist but it still exists in the reality. The concept “virtual organization” appeared in the early nineties. It could be created thanks to informational technologies development, especially global informational networks and great data bases. It is the answer to free market demands and necessity to adjust to its competitiveness. Now several definitions of virtual organization can be found in literature, among them the following:

- “Temporary network of independent companies – deliverers, clients, even former competitors – which are linked by informational technology in order...
to share competency and costs of access to new markets” [6].

- Virtual organization is a network of institutions, companies, teams and persons located in different places, organized in loose-connected not-transparent structures, which are linked for the common goal – serving the same client [5].

- “artificial creation, which because of maximal utility for the client and based on individual basic competencies, realizes integration of independent companies in processes (chains) of product creation, without demanding additional expenditure for co-ordination and without depreciation client’s significance because of its own virtuality ” [7].

Virtualization is the most recent and the most developed form of management. The virtual organization appeared as an effect of spatial dispersion of organizational structures of companies. It is created as a result of radical changes of activity forms and management methods and aims to achieve perfect flexibility in operation and to react quickly to changes in the environment.

Typical features of the virtual organization are [8]:

- Temporariness of the organization – temporary creation, destined to the period of task execution,
- Geographical dispersion – units creating the virtual organization are apart from each other,
- Client orientated organization – the virtual organization is created for specific client’s needs, for specific task,
- Intensive use of informational technologies – corporation’s virtualization is possible thanks to development of informational technologies,
- Network organizational structure as a form of the virtual organization,
- Making use of key competencies of virtual organization participants – the partners of the virtual organization should be specialists – leaders in their specific branches.

The examples of the virtual activity are: designing of airplanes, cars, building objects, training of pilots using computer simulation, teaching foreign languages, selling tourist services etc. Co-operation in the frame of the virtual organization can bring considerable benefits thanks to selection of partners and synergy resulting from partners’ qualifications.

It is assumed that virtual companies come into existence in two ways:

- As an independently acting creation established as a result of an existing situation;
- Through evolutionary transformation of traditionally organized corporation thanks to action of internal and external factors.

The crucial feature of such organizations is their flexibility. Their aim is to fulfill efficiently clients’ demands. They operate in the direction of optimization of (virtual) chain of value creation. The virtual organization has no physical structure, has no common administration or buildings but it acts as any other organization. It has no legal status, has no own location or own employees, however those who are members of the board (information broker) can be employees. The board coordinates processes with which the given corporation is occupied.

The virtual organizations are the creations which do not formally exist though they fulfill functions of the real organizations. The characteristic feature of this organization is mutual confidence of its participants.

The necessary condition for its existence is development of the informational technology.

The ground of the virtual organization functioning is free and fast flow of information, its gathering and processing. The client, the deliverer and the company contact with one another in the virtual space, which is exemplified on the screen.

The system of the virtual communication of e-corporation consists of three segments: Intranet, Extranet and Internet.

3. Advantages and disadvantages of virtual organizations

Advantages of the virtual organization are:

- Increase of technological potential. During preparing a technical draft of the object and constructional draft they are not limited by technological potential of one specific company.
- High speed of realization of a task. Decisive chain is shortened, there is a possibility to make use of high number of partners with high qualifications, possibility to plan “just in time”.
- Decrease of costs.
- Fast development of the enterprise, possibility to apply modern management methods and techniques.
- Possibility to react quickly to changes of the environment.

Disadvantages of the virtual organization are:

- There are serious doubts as to the credibility of the company, which can not be located in the “real world”. It is necessary to create proper
recommendations or insurances of virtual companies.

• Immaturity of the market for making use of virtualization.
• Psychological barriers among employees and clients. Not all employees accept such model of activity, not everybody feels well in the new situation. By working directly in the company we fulfill our social needs, such as meetings with colleagues, conversations, interpersonal emotions, etc.
• Condition of mutual confidence among partners – it is difficult in the business world.
• The risk of joining in by incompetent or unverified organizations.
• Limited access to the internet, especially on the areas where there is no direct access to the net.

4. Characteristics of repair works

Repair works are characterized by specific technological and organizational features which differ them significantly from other types of works (for instance during construction of a new object). Companies operating in the field of building repairs (also historical objects) are particularly foreordained to create the virtual structures. This results from the features typical of this type of building industry:

• Individual character of each repaired object (in the range of number of works, conditions of construction, type and complexity of works).
• Existence of many works of special type (mostly in the narrow range), for instance renovation of carved timber ceilings, injection of foundation walls. This arises the need of employing highly specialized workers.
• Application of materials and technologies which are not nowadays applied, which were used in the period of the construction of the repaired object. Simultaneously modern materials (for instance carbon fibers) and modern technologies (renovation plasters) are applied [1,4].
• Application of special machinery.
• Difficult conditions – city centers, narrow streets, small building sites.
• Variable conditions – lack of repeated works.
• Great part of logistic processes. Because of small building sites (or lack of them) materials and equipment are delivered in “just in time” system.
• Difficulty in determining the full range of repair works on the stage of planning.

There is high risk of change of range and type of works during realization.

Considering all the above mentioned features of repair building works under strong competition, only very few companies can afford maintenance of a construction enterprise with such flexible form of production. Dynamics of technology development of these works induces the construction companies to specialize in narrow ranges of works, for instance construction of horizontal insulations through cutting the walls, pressure injection, laying renovation plasters etc. Nowadays it is not possible for a construction company with the traditional structure to carry out independently (with only own assets) repair or modernization of any object.

Only companies with modern organizational structure making use of so called virtual organization are able to rise to the challenges.

5. Organizational model of virtual corporation of repair works

A virtual form of a corporation organization is based on so called ‘competency center’, which is also called the core of the corporation. The core of the virtual corporation consists first of all of intellectual capital, knowledge, patents, inventions, financial and innovation abilities. The scheme of organizational structure of participants of investment process is presented in fig. 1

A virtual corporation of repair works can be created as an independent formation (core, integrator) or – which is most common in practice – can be created through evolutionary transformation of traditional construction or design company.

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**Fig.1.** Scheme of organizational structure of participants of investment process, which is executed by virtual organization
The range of competencies decide which company initiates the changes. An important aspect is “the integrator” access to selected information of strategic character, the situation in the range of possessed and accessible technologies, financial situation, marketing and staff. Also reputation of the participants plays an important role in the process of creation the values of the virtual organization. Members of the virtual organization are self-sufficient and their activities are mostly independent.

The virtual corporation usually is created to execute the specific task. Time horizon of existence of such corporation is limited to the duration of the task execution (for instance one object or set of objects). Afterwards the virtual corporation spontaneously terminates its existence or it undergoes reconfiguration for the next task.

The following seven phases can be distinguished in the service life of the virtual corporation:

- market research,
- selection of the task,
- negotiations and signing the contracts,
- task completion,
- calculation of income,
- termination or reconfiguration for the new task.

The basic duty in the virtual corporation management is division of works into tasks for partner companies – outsourcing of the processes - and coordination of these tasks aiming at efficient execution. The typical feature of the virtual corporation is lack of physical contacts among partners and clients of this corporation. The situation is additionally complicated by the fact that partner companies have their own individual goals, own praxis. This is why managing the virtual corporation must be performed by creation of such forms (structures), which secure conditions for realization the superior goal of the corporation in relation to the rest. This entity manages the whole corporation and only he appears on the market.

It is not easy to create the virtual organization and to manage it. This is an effect of its structure. Participants of the virtual organization are not within the physical distance. The group of people with determined abilities, supported by devices and infrastructure, must manage the common goal, so the virtual organization can operate properly.

These people has to act totally loyal. Also the market position of the integrator is very important.

6. Conclusions

The changes in the environment in which companies operate force the changes of operational methods. The concept of virtual companies aims to increase the efficiency of companies through increase of their flexibility and adaptability, lowering the costs, reduction of execution duration, securing high quality of construction works and decreasing the risk. The main goal of the virtual organization is striving for complete fulfillment of client’s demands at high efficiency of the undertaken tasks.

Cooperation in the frame of the virtual organization can bring considerable benefits for all its participants. Partnership in the network produces a synergic effect.

It has to be stressed however that the concept of the virtual organization can not be applied everywhere, it can not be put into operation in every company.

7. References

4. Орловски З.: *Основы организации логистическо-производственных системы монолитных работ*. УП „Технопринт“, Минск, 2004 (in Russia)