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# PROJECT APPROACH IN DESIGN OF COMPLEX ORGANIZATIONAL STRUCTURES

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## ABSTRACT
*In conditions of globalization, expressed, the survival of companies is continuously adaptation to market conditions. Also, any organization cannot allow itself to exist like isolated island. The growing importance of project management can be traced through topics such as roles and responsibility, organizational structures, delegation of authority and decision making, and especially corporate profitability. Twenty years ago, companies had the choice whether or not to accept the project management. But today, the survival of the company may very well rest upon how well and how quickly project management is implemented. Manufacturing systems are becoming increasingly complex because growing requirements both for productivity and flexibility. This complexity is more evident when dealing with complex systems (for example clusters) where the usual control requirements are met by centralized systems that are too rigid and hard to manage, maintain and update. The project organization should result from the project strategy, it should be constructed in such a way that the strategy can be implemented within the environment of the project.*
**Keywords:** complex organizational structures, cluster, project approach, competitiveness, cooperation

## 1. INTRODUCTION
Global competition and rapidly changing customer requirements are forcing major changes in the production styles and configuration of manufacturing organization. Increasingly, traditional centralized and sequential manufacturing process planning, scheduling and control mechanisms are being found insufficiently flexible to respond to changing production styles and high – mix low – volume production environments. The traditional approaches limit the expandability and possibility of reconfiguration in the manufacturing systems.
In conditions of globalization, the survival of companies is continuously adaptation to market conditions. Also, any organization cannot itself allow to exist like isolated island. Each organization is network of other organizations. One of the greatest challenges companies have to face is the change towards flexible and demand-driven production. More information has to be handled and a considerable speed-up of development and manufacturing processes is needed. However, the actual situation is characterized by strong borderlines between process planning, production control and scheduling systems, caused by extreme specialization and independent historical paths of system evolution. This gap implies loss of time and information. Thus, there is a strong need for innovative concepts for management and control of integrated information logistics, production scheduling and

process planning. Manufacturing enterprises are now moving towards open architectures for integrating their activities with some of their suppliers and customers within wide supply chain networks. To compete effectively in today's markets, manufacturers must be able to interact with customers, suppliers, and services rapidly and cheaply.
Manufacturing needs new organizational principle and structures to face new challenges: customer-driven production in a volatile market environment, globalization, the potential of electronic commerce and virtual enterprises, and the need of integrating human resources. Redundant functions and distributed responsibilities, tasks and resources are necessary in order to respond to changes, either they come from internal disturbances or from external market conditions [1]. Transformations of manufacturing organizations already point toward network-like, dynamic and reconfigurable federations where production is carried out by more or less autonomous and cooperative production units.

## 2. PROJECT APPROACH

Organization of the process in a company is extremely complex process itself, and when we transfer it to the cluster level, we get a complex task which is difficult to solve. There are no developed simple models which would enable increase of process effectiveness in a complex organizational units like clusters are. In that regard, this paper makes a pioneering attempt. One of the possible solutions which would decrease complexity of flows and increase process effectiveness within a cluster is application of Project approach.
Productivity and its growth determine prosperity. Innovation is a key driver of productivity growth. Clustering supports both productivity and innovation. Porter's Diamond theory provides a useful concept that can help companies' business, government and other institutions to explore improvements in the complex organization like clusters. Various models and solutions have been extensively studied in the previous literature. These models can be divided in the following categories:

- Process integration in the projects at the level of industrial clusters
- Process integration in the projects at the level of companies within the industrial cluster
- Integration of process and distribution at the spot of procurement of raw materials, transport and distribution of semi or finished products to customers.

A relatively deferent approach looks at the concept of clusters as a factor of competitive advantage [4]. Within this approach, the strength of a cluster depends on a series of interacting factors that can be grouped under the categories: company's strategy, structure and rivalry; company's conditions; related and supporting industries; and factor conditions related to climate, labor supply, government tax and incentive policies, etc. Although this approach pays more attention to knowledge-based elements as key determinants of a cluster's strength, it still overwhelmingly relies on the notion of economic linkages when categorizing a cluster's competitive dynamics and characteristics. Project-based elements as key determinants of a cluster's strength and performance do receive a considerable amount of attention within qualitative and case-based research studies [5].
The aim of this paper is to present the application of the Project approach as a model of optimization of complex organizational structures like clusters or business networks are. Application of Project approach in cluster produces savings and benefits in almost every area of the business.
Project approach has a lot to do with the effectiveness of a cluster and its staff. Disparity in regional economic development is strongly influenced by the proportion of trade, local industries, resources and mix of organizations present in the cluster [7]. Participating companies can enter a cluster with only one part of their production program, and produce or distribute other products on their own, or in cooperation with companies which are not in their cluster. It is necessary to define basic projects which are offered by a cluster, and adjustments of organizational and managerial cluster structures are done in regard to these projects.

The three most well known organizational structures are the functional, project and matrix hierarchies.
The functional organizational structures is hierarchy in which cluster staff members are grouped by specialty (e.g., marketing, accounting) have a clear line of authority and have one superior within their functional organization. In this organization, the line of authority normally goes from the project manager through a functional manager in a cluster company to the project staff member and back. Therefore, the project manager's authority over the project staff is limited. The project organization

typically includes collocated team members with different skill sets who stay together as cohesive units for extended periods of time and over several project engagements on the level of the cluster. Project manager authority is the greatest in the project organization. Matrix organizations are a combination of functional and project hierarchies. This organization use a system in which project staff members are "borrowed" from their functional organizations to be engaged on a specific project and then returned, when their part of the project has been completed or their skill sets are no longer needed. There are three types of matrix organizations:

- Weak matrix: Similar to functional organization in which project manager borrows an employee from a certain functional discipline (from a cluster) to work on project, but the project manager's responsibilities are to do more coordination an expedition than actual management.
- Strong matrix: Similar to project organization in which project manager has a full time staff borrowed from functional disciplines. The project manager has full authority over the staff.
- Balanced matrix: A combination of weak and strong matrix where the project manager borrows staff as needed for the project from the functional organization in cluster. The project manager has legitimate authoritative power over the project efforts and management of the cluster, as well as of cluster members.

## 3. NEEDS OF THE APPLICATION OF THE PROJECT APPROACH ON THE EXAMPLE OF CLUSTER DEVELOPMENT IN VOJVODINA

First of all, we have done global analyse about development factors and potentials for development in Autonomy Provincial of Vojvodina and some of that factors were: natural resources, demographic factors (Human resources), economy- infrastructure, culture and education, social protection, general conditions. After that, we have done research work in 140 small and medium enterprises in Vojvodina about their problems in business and needs for cooperation with others.

On territory of Autonom Province Vojvodina, major problems are: small adequacy between structure and business culture of partnership enterprises, lack of legal and financial possibility for cooperation, lack of entrepreneurship spirit and skills or competence, low level of confidence between partners and other institutions, lack of knowledge, lack of informal connection and confused and unreal expectation inside of cluster.

The key of development a lot of small companies within cluster is in their ability to scoop the power from cooperation and common work whit the use of formal and informal networks" (OECD, 1996). Efficient clusters insist to have strong networks and partnerships system. Implementation of the project approach in clusters allows that confidence and relations between employees can be developed and thus they provide high level of „intellect capital". In order to develop this partnership, time is necessary. "Very important thing is attempt that firms start to work together in moment when that is logical. But if they want to develop cooperation years are necessary " (Practicioner Observation, 2002). It's necessarily highlight that first clusters weren't „formed" than „discovered" in regions where exists and cooperate more successful enterprises from one economic branch or one value chain. Also, there are engineers, lawyers, business consultants, researchers, institutes and educational institutions. In regard to fact that suppliers and manufacturer station to oneself and starting business on place where is concentration of firms and partners is increased that means that clusters can develop alone.

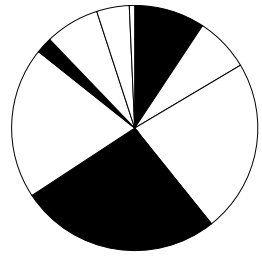
One of the important forms of connections in the clusters is the participation in joint projects. But for effective cooperation, it is necessary to adjust the organizational structure. Research on the territory of Vojvodina has shown needs of the application of the Project approach in the cluster. In this paper we won't present all results, but we will mention some of them.

First conclusion is that 90 % enterprises want to be part of cluster, because they think that can improve their situation and position by cooperating with other.

Very important data for valuation of possibility for cluster establishing and development is fact that all enterprises have more problems in their trade and they need support. Majority said that they have a big problem with infrastructure and competition, after that attendant economy, tax and technology. Majority highlighted that they have needs for improvement in manufacture processes, management, sales and marketing.

*Table 1. Results of question "Which are your needs for improvement?"*

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| | No rang | *4* | *2.9* | *2.9* | *2.9* |
| | Management | *46* | *32.9* | *32.9* | *35.7* |
| | Production | *54* | *38.6* | *38.6* | *74.3* |
| | Sales | *16* | *11.4* | *11.4* | *85.7* |
| Valid | Marketing | *10* | *7.1* | *7.1* | *92.9* |
| | Administration | *1* | *.7* | *.7* | *93.6* |
| | Engineering | *7* | *5.0* | *5.0* | *98.6* |
| | Trainig | *2* | *1.4* | *1.4* | *100.0* |
| | Total | *140* | *100.0* | *100.0* | |



One of reasons to enter the cluster is export improvement and we found important data that only 49 enterprises export their products, but 91 enterprises don't do that. For cluster operating information technologies, good Internet connection and good communication between enterprises are very important. Only 104 enterprises have Internet connection, but just few of them have modern Internet.

## 4. CONCLUSION

These data indicate the need for cooperation and the need to start a series of projects. Also show a number of existing shortcomings that should be removed by applying the project approach. In the first stage of the development of clusters recommended balanced matrix: a combination of weak and strong matrix where the project manager borrows staff as needed for the project from the functional organization in cluster.

The cluster and its companies are responsible for continually adapting and readapting the methodology and associated policies, using support from management steering committees and advisory boards, for both input and evaluation. The cluster members are also responsible for ensuring that project approach is implemented. The clusters and their management staffs have the following responsibilities:

- To provide continual input for improvement of the policies and the methodology
- To identify areas that require modification and adaptation
- To ensure that project approach is implemented in the cluster member companies.

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