

## **COMPARISON OF DIFFERENT APPROACHES TO THE MANAGEMENT SYSTEM CONSTRUCTION AND THEIR INFLUENCE ON THE ENTERPRISE CONTROLLABILITY**

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### **—Abstract —**

*The majority of the heads of the contemporary enterprises realize the existence of the problems connected with the imperfect management system. This work classifies the acting approaches to the construction of the enterprise management system. The comparison of advantages and disadvantages of these approaches, evaluated from the point of their influence on the enterprise controllability was performed in the course of the classification.*

*The work analyses the reason of appearing new approaches to the enterprise management system and special attention paid to the comparison of the functional and process structures of management and to the evolution of the latter one.*

*The management system is considered to be controllable, if to every management action corresponds strictly determined state of the object parameters, and this system is considered to be uncontrollable or not enough controllable, if the management object changes its parameters spontaneously. Therefore, the task of the enterprise administration is to choose the management system that will take into account the enterprise specification and provide its best controllability.*

**Key Words:** *Management System, Functional Approach, Process Approach, Controllability*

**JEL Classification:** **M19**

## **1. INTRODUCTION**

Rapidly changing modern business environment makes the managers permanently searching for the ways to raise the efficiency of enterprises. Being under tough competition conditions, organizations should be flexible, quickly adapt to changing requirements of customers and use in-house reserves to achieve growth in efficiency of their activity. One of such elements is the modification of management structure existing at the enterprise. Currently working structure often bars the enterprise from possibility to break the embedded stereotypes and make a quantum leap in own development

The present work considers the reasons for appearance of new approaches to construction of enterprise management systems. Special attention is paid to the comparison of functional and process structures of management as well as to evolution in the process approach. The use of process management is chosen as the research object since the end product value necessary for the consumer is created in the course of business processes and therefore the use of this approach orients the enterprise towards growing satisfaction level of the end user and higher efficiency of activity carried out by the organization.

## **2. EVOLUTION IN PROCESS APPROACH TO MANAGEMENT**

Great variety of approaches to the management evolution exists. In the present work the management evolution will be examined from the position of process approach to the management and its impact upon efficiency of enterprise activity. Since the basic category of process approach is the concept of business process and numerous definitions for this category exist, in the present work the business process will be interpreted as the following concept: “Business process is a chain of logically connected repeating behavioral steps resulting in the use of enterprise resources in order to achieve certain results of measurable efficiency or products which are of value for internal or external consumers” (definition of authors of the article).

Process approach goes back to 1776 when Adam Smith’s “An Inquiry into the Nature and Causes of the Wealth of Nations” went out into the world. This work examined the issues associated with the division of labour. From the process approach position, the implementation of division of labour split the whole process of work performance into individual acts (accomplished actions) that were the component parts of business process. May suggest that afterwards the introduction of these ideas has led to appearance of specialization and has given

birth to hierarchical structure of management wherein the distribution of duties and responsibility is carried out on functional basis.

Despite its seeming simplicity, division-of-labour approach suggested by Adam Smith has led to a considerable growth in productivity. It should be noted that in the second half of the 18<sup>th</sup> century the equal sign could be put between the productivity and efficiency since in the absence of work automation and with demand dominating over supply the jump in the productivity naturally has led to the increase in enterprise efficiency.

The next stage in development of the process approach can be featured by works of F. Taylor who since 1895 took up the study of issues associated with the organization of labor. As a result of this work, F. Taylor in 1911 published the book "The Principles of Scientific Management" which disclosed the principles of scientific organization of labour. Approach proposed by F. Taylor may be considered as the deepening of Adam Smith's ideas on the increase in labour productivity. In his works F. Taylor emphasized not only the division of labor but also the growth in efficiency of each work operation. He supposed that the use of observations, measurements, logic and analysis could improve many operations of manual labor and achieve more efficient performance thereof. F. Taylor managed to prove the truth of his ideas in practice, having raised the efficiency of many work operations.

Significant changes in attitude towards the process approach took place in the last half of the 20<sup>th</sup> century as a result of profound changes in global business environment. (Smith and Fingar,2002) Confirmation for this phenomenon can be found in the studies undertaken by consulting company Gartner Group (see Table 1) which demonstrated the excess of demand over supply before the 80's of the 20<sup>th</sup> century and sharply changing situation thereafter when supply began prevailing over demand. It happened due to the increased number of manufacturers, global expansion of competition, growing requirements of consumers towards quality of goods, etc.

Data presented above reflect the changes in relations between consumers and business structures. If before the 80's of the 20<sup>th</sup> century the companies could afford raising the prices in order to increase profit, then under new circumstances the price began being formed by the market and in order to achieve the growth in profit the companies had to look for new ways how to reduce costs and strengthen competitiveness.

**Table 1: The development of socio-economic relationships**

Feature	Year		
	1960	1980	1990
Market	“Economy towards Production”	“Economy towards Market”	“Economy towards Services”
Product life	10 years	Few years	Less than 1 year
Competition	Absent	At national scale	Global
Production	Mass	Batch wise	Synchronous
Quality	Reject > 10 %	Reject 1 % “Quality System”	P.P.M. TQM
Restocking	2 to 5 times a year	5 to 50 times a year	50 to 100 times a year
Management type	By orders	MRP	MRPII/ERP JIT
Basic data for production	Previous experience	Forecast	Consumer order

Source: Gartner Group

The examined changes in external conditions in early 90's of the 20th century have led to appearance of a new approach to the management called business process reengineering and founded by Michael Hammer and James Champy. (Hammer and Champy,2003)Basic idea of this approach was the necessity for companies to fundamentally reconstruct their business processes under new circumstances which would allow them achieving an essential increase in efficiency, quality and other indexes of enterprise performance.

This approach probably cannot be called the process management in its pure form since the reengineering is more a tool for perfection of descriptive processes but not of activity management. However, huge contribution brought by the reengineering into the process approach is that implementation thereof requires the company change their views on activity and understand that the company consists of interrelated business processes and not of individual subdivisions and

their functions. Such change in the standpoint requires serious efforts in rethinking of activity and looking for ways to increase efficiency on the level of business processes. (Hammer,2003) Such dramatic change in the view on efficiency is associated with the division between the concepts of productivity and efficiency under altered conditions of external environment. It is connected both with domination of supply over demand and, as a consequence, aggravation of competition (see Table 1) and with growing consumer demands, of which satisfaction is the key point in improvement of competitiveness and efficiency of the enterprise.

Awareness of importance of business process management by 2000 has led to formation of process management methodology that was reflected in quality management standards ISO 9001:2000. This conception was based on 8 principles of quality management which had been formed out of 14 principles of E. Deming for efficient management. These principles once again emphasize the importance of enterprise activity's orientation towards consumer needs and application of process approach for efficient achievement of desired results. (Deming,1988)

The next stage of process management which becomes more and more popular with each coming year is the active use of information technologies in the management. Appearance of this stage is associated with currently observed vigorous growth in information volumes, increasing requirements towards operational data processing, growing needs for online control of enterprise activity etc. (Smith and Fingar,2003) Implementation of information technologies allowed efficiently realizing one of quality management principles: "Only make decisions based on facts". According to this principle the decisions only can be efficient in case when they are based on analysis of data and information. Just these tasks should be solved by means of information technologies: provide management with reliable information, improve information flows and contribute to acceleration of management decision-making.

For purposes of obviousness the evolution stages of process approach to the management are arranged into Table 2.

It should be noted there are no clear boundaries between above-described stages in the development of process approach. Implementation of one or another approach will depend on current level of enterprise development. Some enterprises will use the principles of division of labour while the other ones will carry out the reengineering of their business processes, implement the quality management system and so on. Choice of management system will first of all

depend on those tasks which are put forward before the organization and on requirements made by the management to the administration system.

**Table 2: The evolution of process approach**

Stages of process management	Years	Impact on efficiency of activity	Impact on enterprise controllability
Division of labour (Adam Smith)	1776	Growth in productivity due to process split into simple operations	Creation of specialization, management on functional basis at the level of structural subdivisions
Scientific organization of labour (F. Taylor)	1911	Growth in productivity due to scientific organization of labour on the level of individual operations	
Business process reengineering	1990	Growth in efficiency through fundamental transformation of business processes at enterprise	Management on the level of enterprise business processes
BPM methodology	2000	Growth in efficiency through perfection of business processes	Shaping of integral approach to business processes
BPM + IT methodology	2000	Growth in efficiency through perfection of business processes with the use of IT resources	Combination of business methodology and IT resources. Management sets requirements and tasks that are solved by means of IT

## **2. APPLICATION OF PROCESS APPROACH FOR INCREASE IN EFFICIENCY OF MANAGEMENT SYSTEM**

As an example we further consider the application of process approach on a manufacturing enterprise that is engaged in output of products to consumer orders. For simplicity purposes this article only examines one business process associated with the procurement of raw and other materials necessary for production output. Business processes such as manufacture of products, delivery, auxiliary processes connected with provision of enterprise activity, processes of strategic development etc. are not examined in the present effort since an assumption is made that their

controllability level meets the standards established by the enterprise. In turn, during the procurement process the company permanently faces problems, especially associated with such orders that require searching for a new supplier and entering into contractual liabilities with him. These problems are first of all connected with new, tougher requirements permanently made by consumers towards modification of products, their quality and time of manufacture. Many of the company's suppliers are not capable to meet such requirements which make the company search for new suppliers. Since this process is very labour-consuming and lasting, the company often finds itself unable to promptly respond to changing requirements. As a result, the procurement process becomes time-expanded which leads to the increase in the total order lead time and dissatisfaction of consumers with the prolonged waiting periods.

At the examined enterprise the procurement process is carried out by the supplier and 4 subdivisions of the enterprise: external economics department, legal department, financial director and chairman of the board.

In case when traditional functional management structure is applied, the employees can be observed focusing at their functional duties. Existence of clear boundaries between structural subdivisions bars the managers from possibility to see the whole process since the responsibility is distributed on the functional basis while there is no person in charge for the whole process. As a result, the company has no integral understanding of the performed business processes. Application of this approach leads to such outcome within the examined process which does not meet the consumer requirements since it takes too much time.

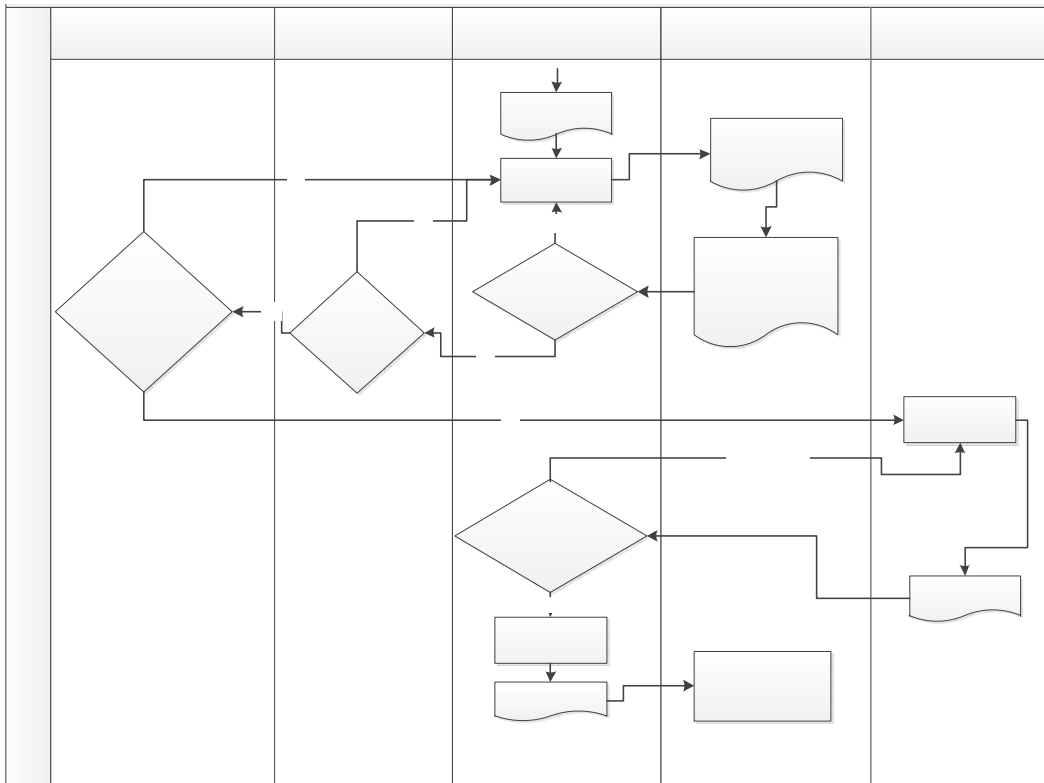
Now we consider this process from the standpoint of the process management. To more deeply understand all peculiar features of the business process, we constructed its diagram obviously demonstrating all stages of the process (Fig. 1).

Construction of process diagrams allows obviously viewing the inputs and outputs of all process stages, process participants, their actions and interrelations.

In contrast with functional structures, application of process management assumes that the organization is focusing at the final result of business process. To realize such approach, a manager is appointed who will be held responsible for the whole process and who will coordinate the actions of staff members participating in this process for achievement of the desired result. Profound knowledge and understanding of their processes allow such managers finding the ways for improvement of business processes and, as a consequence, increasing the enterprise activity efficiency.

In the examined process (see Fig. 1) the role of such coordinator is played by the head of external economics department, who receives orders for materials from production divisions, looks for suppliers, participates in all coordinations on various stages of business process, signs contracts on delivery and makes order to the supplier. The performed analysis shows a serious drawback of this process: too many various coordinations carried out by representatives of different functional subdivisions of the enterprise. Moreover, it should be noted that a refusal of coordination on any stage of business process entails a new iteration of the process and considerably increases the total order lead time.

**Figure 1: The process of raw procurement before improvements**

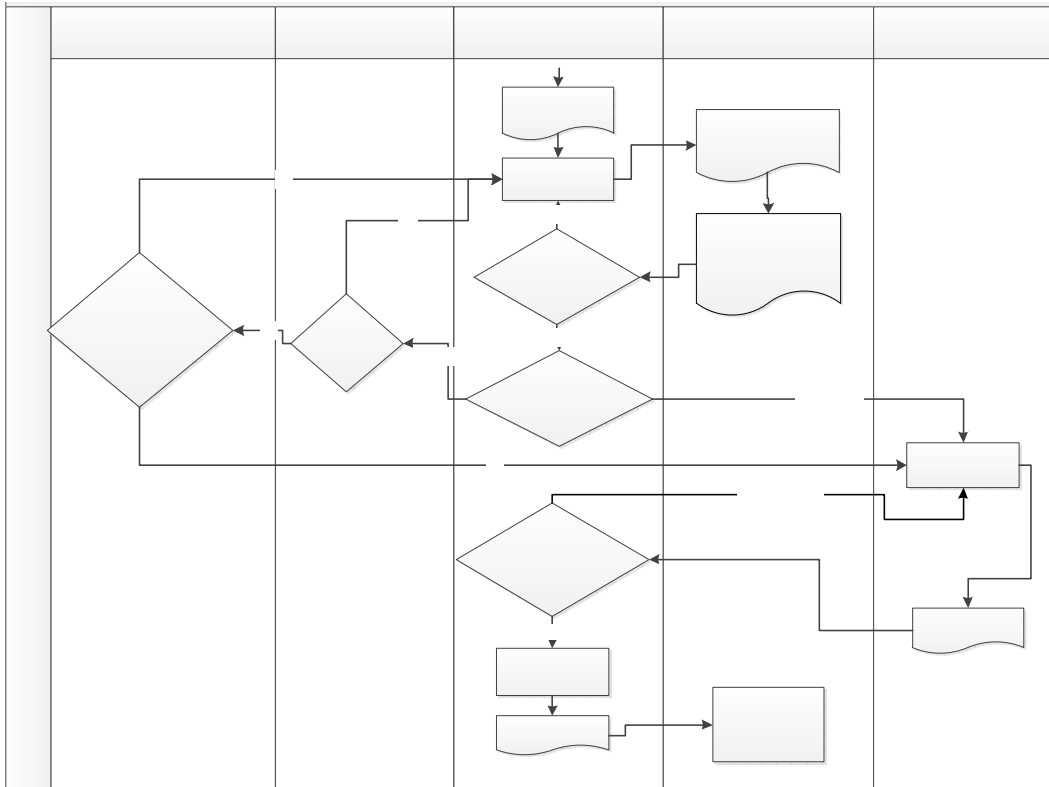


To eliminate this drawback, two versions for implementation of business process are suggested to be developed, which will differ in the cost of transactions being made (see Fig. 2). Upon realization of new business process its manager analyses information on the cost of transaction and independently makes decision which version of business process will be launched.



It would seem that the new scheme of business process becomes more awkward and complicated but in practice, considering that probabilities of occurrence for each of the version differ much, approximately in 99% of cases the business process goes more simply due to the reduced number of coordinations which essentially cuts the total order lead time

**Figure-2: The process of raw procurement after improvements**



### 3. CONCLUSION

The performed work resulted in conducting the evolution of process approach to the management. The work examines the reasons for appearance of new approaches to the process management which were first of all associated with the modified conditions of external business environment, aggression of competition, increasing requirements of consumers etc.

Under present-day circumstances the transit from functional management system to the process one is a very important challenge for managers. Focusing its attention at business processes, the management gets an opportunity to eliminate

Chairman of  
the Board

drawbacks of functional structures and develop own integral view at all processes in the enterprise. Such approach allows understanding the real reasons for problems arising with the company and finding most efficient ways for perfection of business processes. Besides, the integral view at all business processes of the enterprise allows approaching it as a business management system. Such integral view enables improving not a single element of the system but introduce profound alterations into the management system which considerably raises the enterprise activity efficiency.

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