Building the Process-managed Organization by Means of Services

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Abstract: The paper shows how the idea of "service orientation" may be used not as a technical principle only but also as a tool for analysis of the substance of the business - for building the process-managed organization. The principle of services as a common principle for developing the business, and organizing its IT support is used for mental overcoming of the illusory contradiction between both areas - business, and IT.

Keywords. information modeling, business process modeling, service orientation.

1. Introduction

The idea of process-managed organization states that any process in the organization should be linked to the customer needs as directly as possible. In order to achieve this state it is necessary to effectively support the business with the information technology. On the other hand in order to make the support effective it is necessary to understand the substance of the given business as well. Both these tasks have to be solved at the same time in mutual interconnection.

Information technology has its own life cycle, and growth rate determined by the overall progress and utilization of products. Also the business has its own progress determined by different factors. Although both worlds are closely connected they are not synchronized in principle.

Thus it is necessary to use the information technology for the development of business, and to allow both areas grow with their specific rate at the same time. This challenge is the natural root of the so-called "service orientation".

This paper shows how the idea of "service orientation" may be used not as a technical principle only but also as a tool for analysis of the substance of the business - for building the process-managed organization. Regarding the principle of services as a common principle for developing the business, and organizing its IT support as well allows mental overcoming of the illusory contradiction between both areas - business, and IT.

2. Process-oriented management

The first complete explanation of the idea of process management as a style of managing an organization has already been published in [3]. The authors excellently explain the historical roots, as well as the necessity, of focusing on business processes in the management of the organization. The major reason for the process-orientation in management is the vital need for the dynamics in the organization’s behaviour. It has to be able to reflect all substantial changes in the technology as well as in the market as soon as possible. The only way to link the behaviour of the organization to the changes in the market and technology possibilities is to manage the organization as a set of processes principally focused on customer needs. As customer needs, as well as requirements driven with the technology possibilities, are constantly changing the processes in the organization should change as well. That means that any process in the organization should be linked to the customer needs as directly as possible. Thus, the general classification of processes in the organization distinguishes mainly between:

- **Key processes**, i.e. those processes in the organization which are linked directly to the customer, covering the whole business cycle from expression of the customer need to its satisfaction with the product / service.
- **Supporting processes**, which are linked to the customer indirectly - by means of key processes which they are supporting with particular products / services.

Whilst the term “key process” typically covers whole business cycle with the customer - it is focused on the particular business case; the supporting process is typically specialized just to the particular
service / product, which means that its product is more universal - usable in a number of business cases. This approach allows the organization to focus on the customers and their needs (by means of the key processes), and to use all the traditional advantages of the specialization of activities (by means of the supporting processes) at the same time. Key processes play the crucial role - by means of these processes the whole system of mutually interconnected processes is tied together with the customers’ needs. Supporting processes are organized around the key ones, so that the internal behaviour, specialization, and even the effectiveness of the organizations’ activities are subordinated to the customers and their needs.

Concluding from previous paragraph we can summarise the key principles of the process-oriented management of the organization:

Change as a principle - the concept of change changes its nature. If the organization should fulfill the need for dynamics stated above the change has to become an integral part of it's life instead of something exceptional.

Critical need for modelling business processes is the direct consequence of the previous principle. Processes have to be modelled in order to allow:

- permanent following the nature of the business to ensure the correctness of changes according to general business rules;
- permanent seeking for possibilities of changes in the business with use of new possibilities.

Changing business means changing processes exploiting new possibilities which are not just in the field of technology but also in people minds, social system etc. All these possibilities for the change should be taken into the account while modelling business processes. In order to fully and meaningfully exploit the possibilities of change it is necessary to have the notion of the substance of business - what is necessary and what is not, what is changeable and what is not. It means that the business process modelling methodology should be able to find this substance of business by means of it's methods and techniques.

Such a view of the behavior of the organization is quite different from the traditional one. Mainly, the key processes represent an unusual view of communications and collaboration within the organization. In traditionally managed organizations the organization structure reflects just the specialization of work; it is static and hierarchical. The concept of key processes brings the necessary dynamics to the system – key processes often change according to the customer needs, while supporting ones are relatively stable (the nature of the work is relatively independent of the customers' needs). At the same time, the key processes represent the most specific part of the organizations' behavior, while the supporting ones are more general and standard. Thus, the supporting processes are the best candidates for possible outsourcing while the key ones should be regarded, rather, as an essence of the market value of the organization. So, we have a system of processes with very different "speeds". To ensure the necessary communication among them, we need to have the interface working like a differential gear. Firstly, we need to define the parameters of each connection point of two processes with respect to both sides of this relation – as the service offered by the supporting process to the supported one. This way the idea of process managed organization perfectly fits the idea of service-oriented structure of a system. At the same time these principles express the essence of the requirements for the business process modelling methodology. Both areas of business process modelling, and service-orientation are thus principally interconnected.

3. Designing the process-oriented organization using the concept of services

Once we accept the ideas of process managed organization stated above we need to answer the consequential question - how to design such a system.

There are a number of methodologie dealing with the problem of Business Process Modelling, some of them can be regarded as complex in the sense they are taking care also of the business objects, not just the processes (e.g. BORM [14]). The following text describes the process of the Business Processes System Design which is a part of the Methodology for Business Processes Analysis and Design – MMAPB. The design technique covers the whole process from the identification of the basic activities to the design of key and supporting processes as late as the building of the resulting infrastructures. The tools used by the methodology are based on common standards BPMN, UML, and Eriksson/Penker Notation . The root of the methodology is defined in the formal meta-model as a part of the development project OpenSoul . The key ideas of the modeling method are described in, and . Figure 1 illustrates how the above mentioned standards are used in the methodology for the global and detailed view on business processes.
The crucial role in the methodology plays the concept of services. The importance of this concept follows from several mutually connected phenomena: from the historical roots of Service Level Agreements in the area of management, over the Service Oriented Architecture in IS/IT, up to the latest generalized Service Science Management and Engineering (SSME). In the methodology we use this concept as a main tool for structuring activities in the processes as well as for building the interface between the process model (virtual world) and the real world infrastructures - organization and technology including the IS/IT.

Figure 1 expresses the procedure of the business processes system design as a set of succeeding / parallel steps.

1. Analysis of the existence of necessary activities and their ordering in the context of the key processes;
2. Uncovering key processes (thick version)
3. Thinning key processes - getting off all actions which can be regarded as a standalone supporting process – Identifying supporting processes
4. Tuning the system of processes.
   Key vs. Supporting processes, refining the Global process Model
5. Detailed description of the interface among processes (SLA)
6. Tuning the processes detailed description.
   Revision of the key processes, their events, and reactions.
7. Building resulting infrastructures
   System of roles, responsibilities, rights, productivity evaluation, quality evaluation and control, organization elements, etc. etc. etc. etc. etc. etc. etc. etc. etc.

Figure 2. Procedure of the business processes system design

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The figure is just an illustration of the relations of models. Unreadable text is not important here.
Firstly, the basic natural sequences of activities are revealed (Step 1) together with uncovering the key processes at the same time (Step 2).

The main subject of interest in the Step 1 is the natural succession of activities in the regular form as people know them, work flows, legal procedures etc. These sequences of activities serve in later steps as the basis for revealing the proper structure of the process system. Necessary activities (and their basic causal consequences) form the basis of the supporting processes. At the same time, they are the roots of the key processes as well (see the Step 2). Each key process represents the way of achieving the key type of product. The structure of the key process can, thus, be derived from the life cycle of the key product, as a final result of the process. The key process is a process by which the organization realizes some external value – value for its customers.

Steps 1, and 2 have to be performed simultaneously because they are mutually complementary. Uncovering key processes has to be based on the uncovering of the necessary succession of necessary activities, and vice versa - the idea of the key process gives the notion of which natural activities are important in the light of the goal which the key process is representing. In fact, it is not important which of both steps starts, nevertheless it is impossible to make the following decision without the second activity.

In the example in figure 1 it is obvious that the key product of the university is education. That means that the key process of the university is the education process, obviously. On the other hand, the key product of the university is obviously not the Study program accreditation as it does not realize any external value in itself – it rather helps the key process; ‘education’; to realize the value of education.

In the first version of the model, the key processes naturally contain a number of supporting activities and sub-processes (contextually). It is the important task for following steps to free key processes of all supporting activities (see below).

The outputs of the first two steps are:

- Structured list of potential processes / activities and their successions distinguishing mainly between the key and supporting processes;
- Basic attributes of the key processes;
- First version of the key process run models (basic process logic of the activities still containing a number of supporting activities which should be removed later).

Once, in the first two steps, the basic process structure is uncovered it needs to be restructured in order to find the natural border between the leading – key activities which represent the management, and the supporting ones, representing the production. Every key process is naturally “long” because it covers the whole business case from the identification of the customer need till the satisfaction of this need by the product (service). At the first sight (Step 2) the key processes are also “thick” – they contain a number of supporting activity chains. The Step 3 strives to remove, as much as possible, the supporting activities from the key processes. We are speaking about the “thinning” of the key processes.

All action chains which can be regarded as supporting chains, arise from the key processes on the principle of „outsourcing“ them into standalone supporting ones (even, possibly, outside the organization): Any relatively standalone, continuous, homogeneous, and generalizable part of the process will be removed from the key process, generalized, and established as a supporting process. As a result of this removal some control activity (managing the supporting service delivery) remains in the key process in the original place of the removed supporting activity chain.

In the step 5 (Detailed description of the interface among processes), the interface to the original (mother) key process will be described including the basic parameters of the product / service (see the principle of SLA below).

Subsequently it is necessary to adequately rework and elaborate models in detail, and complete the structure of the Global process model in the Step 4.

The outputs of the second two steps are:

- the second version of the key process run models expressing the key process basic logic without the supporting activities.
- Set of supporting processes newly discovered by removing supporting activity chains from the key processes.
- Completed Global process model;
- Completed specification of the interface among the processes (events, end states and their successions, and other important information for the SLA specification in the following step).
Interfaces among processes, which have arisen in steps 3 to 4 must be elaborated in detail. Great attention should be paid to the interface among key and supporting processes. In the Step 5 every interface is described in the form of „SLA“ (Service Level Agreement). Simultaneously the revision of the key processes run, their events, reactions, and tuning of this description with the Global model, should be performed in the Step 6. Models are completed with actors, inputs, outputs; and overall revision of the Global model of processes is made in this step. The steps 5 and 6 result in following outputs:
- SLA description of most important interface among processes.
- Actualized Global model of processes.
- Actualized process attributes descriptions.
- Actualized process run descriptions of the key processes and other important processes.

Similarly to the steps 1 and 2 also the steps 5 and 6 have to be performed simultaneously because they are mutually complementary. Revision of the details of key processes in the Step 6 needs the notion of the details of their relationships following from the analysis of the SLAs in the Step 5, and vice versa.

The final Step 7 of the procedure represents the interface to the subsequent activities of the organization building process. This step consists of the elaboration of the process interface in order to analyze the possibilities for realizing the service which the supporting process represents (the supplier part of the SLA). Activities of this step lead to the creation of both main infrastructures:
- the basic requirements for the organizational infrastructure are analyzed with the definition of roles, their responsibilities, communication procedures, and other organizational aspects which follow on from the mutual competencies of both attendees of the business relation represented by the SLA;
- Similarly, the technical infrastructure needs can be specified this way (necessary production and workflow technology support, as well as the necessary Information System services).

Particular outputs of this step are following from the detailed specification of products / services in the SLAs, for instance: system of evaluation of the process’ cost (cost-based price of the process product); system of evaluation of the process’ performance; system of evaluation of the actors’ performance; outsourcing decision support system; information requirements / needs of the processes, etc.

4. Conclusion

This paper discusses the concept of services as a tool for Business Process Management. The paper just outlines some basic contingencies which follow on from the inspiration by the theory of services in the area of process management. It points out the significant similarities among different areas of possible application of the “service-oriented thinking”, such as software development, process management, outsourcing, etc. It also points out the obvious convergence of all these phenomena – outsourcing as an original area of the SLAs is the principal way of recognizing the substantial differences between the key and supporting processes which, at the same time, directly corresponds to the need to tie the system of business processes in with the enterprise strategy on one hand, and with the supporting technology on the other hand.

The basic conclusion from the previous paragraph is: the concept of services should be regarded as a general principle for recognizing the interface between two substantially different areas connected with some common sense. This paper shows how this concept works as a guide for specifying the interface between the various types of processes (key versus supporting ones) which differ mainly in the reasons and “speed”, and are mutually asynchronous. It also shows how this principle can be used for specifying the interface between the system of processes and supporting infrastructures (technology as well as organization). A similar area of application of this principle is the interface between the strategic activities and process management of the organization which is not presented in this paper. This interface is the main subject of the work of R.Kaplan and D.Norton. Their theory could be also significantly extended this way.

The paper also describes basic procedure for analyzing and designing the system of business processes in the organization with respect to the consequential activities (Building the resulting infrastructures). In this way, it outlines what should be an area of future development of the methodology.
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6. References


JEL Classification: L80, M15