

Business Process Modeling Tools for Modeling of Organizational Structure

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Abstract. We can use Business Process Modeling (BPM) tools for modeling the organizational structure, however, there are many imperfections in the existing BPM tools that hinder the process of analysis of existing or future situation in an organization. In our research we analyzed some existing BPM tools in order to determine whether they are suitable for modeling various structure types and what is more, how we can use the results of structure modeling.

Introduction

Every organization bigger one or smaller one has its structure. Organizational structure is the set of arrangements by which the resources of an organization, human and others, are connected through relationships [1]. All processes of organization are supported by the structure of organization, thus the structure has to be suitable for these processes. Organizational process according to Espejo [1] is the collection of activities that takes one or more kinds of input and creates an output of value to a customer inside or outside the company. How can we know whether the structure and processes correspond or not? If there were changes in the structure of the organization how would these changes reflect in the processes of the organization? In order to find answers to these questions modeling of organizational structure and processes have to be performed. There are many Business Process Modeling (BPM) tools on the market that can be used for this purpose. In our research we analyzed four BPM tools with the aim to find (1) what are the possibilities to model organizational structure; (2) are the modeling results easy to understand and apply for decision-making process; (3) how can we link organizational structure with the processes of organization in these tools.

Analysis of BMP Functionality for Organizational Structure Modeling

There are different types of organizational structure that can be used in different organization: *Simple structure*, *Functional* [2], [3], *Multi-divisional structure* [3], *Project* [4], *Matrix* [2], [3], [4] *Hybrid and free structures* [5].

We have based our research on the matrix structure, because of the fact, that this structure is the most complete of all above-mentioned structures. During the research we found that there are still some problems in matrix structure and consequently we concluded that organizational structure model should be expanded with more elements.

Our solution of this problem is *multistrata fractal modeling* [6], [7]. On the basis of this approach we try to describe every element of structure from different viewpoints.

We analyzed four BPM tools: ARIS, CAISEWISE, GRADE, PROVision in order to evaluate their capability for organizational structure modeling. The results of analysis are available in Table1.

Table1. Summary of functionality of tools

	ARIS	CASEWISE	GRADE	PROVision
Elements	Large-scale	Low-scale	Large-scale	Low-scale
Relationships	Large-scale	Whole-part only	Whole-part only	Whole-part only
Possibility to change visual view of elements	Yes	Yes	Yes	No
Correspondence with Process Model	The same elements in structure and BPM. Relationships can be viewed graphically.	BP can be added to organization unit, but cannot be viewed graphically.	A dynamic link between business process model and particular elements of organizational structure can be established	BP model shows what processes belong to organizational unit. BP model can be created only after organizational structure model
Multi level modeling	Yes	Yes	Yes	Yes
Possibility to add properties to organizational unit	Yes	Yes	Yes	No

In our research we analyzed several models of organizational structure and concluded that none of them fully supports organizational structure modeling. As a result of this we suggested extended organizational structure modeling – by applying multistrata fractal modeling. BPM tools that can be used in structure modeling were analyzed, as well. We found that they differ in their capabilities to present complex organizational structures. Our further research will be focused on the development of the model of organizational structure, and define requirements for the tool, which would satisfy modeling of organizations that are functioning in turbulent environment, and would include elements relevant for feasibility study of information systems to be introduced in such organizations.

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