

Abstract

Background: Collecting information for decision-making characterizes almost all socio-economic organizations. Information-decision processes are an important aspect of the activities of enterprises, which, coexist in a dynamically changing socio-economic environment. Those organizations are looking for methods to estimate and analyze possible scenarios and consequences of planned decisions in a short period of time. The method of transformation of information and decision-making processes developed in this dissertation provides a unique (previously unrecognized in the literature) support for decision-making on change. The main distinguishing feature is the short period of its implementation (all phases of the method: simulation, transformation and prototyping, last one day). Rapid process transformation is often a prerequisite for an organization to achieve success in a changing environment, and to reduce the time to deliver a decision plane (resulting from process prediction), can be an important element in building a competitive advantage.

In the course of the research of decision prerequisites, conducted among decision-makers in Polish organizations, barriers and difficulties associated with the implementation of process changes were recognized, among others. The time-consuming nature of the analysis and the lack of guidelines on how to carry it out were mainly postulated by respondents, which solidified the validity and applicability of the developed method.

The research gap perceived in the literature and the application gap identified in companies required finding answers to the following research questions:

- Q1: What is the cognitive deficit in the literature in the area of methods that allow process transformations in a short time (1 day)?
- Q2: What are the action steps identified in the literature in methods to support process transformations?
- Q3: What barriers/difficulties are associated with implementing process transformations?
- Q4: Which criteria for evaluating methods supporting process analysis are important from the experts' point of view?
- Q5: What assumptions should the method of information and decision making process transformation meet?
- Q6: Does the developed BPRPM (Business Process Rapid Prototyping Method) method allows transforming information and decision-making processes in a short time (1 day)?

The purpose of the study is to develop a rapid method for transformation of information and decision-making processes, which will provide process owners with management information to support decision-making, both short-term and long-term.

Methods: In order to answer the research questions posed and to achieve the goal set in the dissertation, the dissertation author carried out: a systematic review and critical analysis of domestic and foreign scientific literature in selected databases: Web of Science, Scopus, Google Scholar; identified and comparatively analyzed the differences between the methods of transforming information and decision-making processes; using a survey, identified the barriers/difficulties associated with implementing process changes, and using a statistical method, examined the relationship between the size of the organization and the occurrence of difficulties associated with analyzing processes. Expert survey was used to establish a ranking of criteria for evaluating methods supporting process analysis. Critical analysis and logical construction methods were used to develop a simplified and a detailed model of the BPRPM method. Postulated subject methods were verified as part of studies that included computer simulations and prototyping workshops.

Moreover, validation of the developed method was documented in the form of case study descriptions.

Results: The result of the implementation of the work were the consequence of the cognitive deficit in terms of: systematizing and comparing twenty-one selected methods which support the transformation of information and decision-making processes; defining a set of sixteen assumptions (based on which the BPRPM method was developed) as well as, determining the relevance ranking of twelve evaluation criteria, which were used in the evaluation of the analyzed methods/tools/notations/standards/architectures/models. In the response to the research questions, a set of identified barriers/difficulties related to the implementation of process changes were determined. Moreover, the relation between the size of the organization and the usage of the process analysis was confirmed. The lack of relation between the size of the organization and existence of barriers/difficulties were identified in process management. In addition, validations of the developed method were documented in the form of case study descriptions.

Conclusions: A new method for rapid transformation of information and decision making processes has been developed to provide process owners with management information which supports decision-making. The method in question was named by the acronym BPRPM, derived from the English words Business Process Rapid Prototyping Method. The developed method allows to experience the transformation of information and decision-making processes in a short period of time (one day) with minimal involvement of the organization's personnel and financial resources. The BPRPM method reaches all the developed

assumptions and meets all the relevant criteria for experts, its development fulfills the main objective of this dissertation.