

THE QUESTIONS OF USING HEURISTIC AND LOGICAL METHODS IN BUSINESS-PROCESS DESCRIPTION

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Abstract. The questions of using heuristic and logical methods in business-process description, construction and evaluation of the business model are being regarded in this article. An approach to solving the problem of informational flows classification.

Introduction

Activity of the enterprise is mostly determined by business-processes, realized in it and described by informational flows. Flows' classification is necessary for formalized description of the business-processes and construction of the business-model, which may be used for the analysis and enterprise activity optimization. The questions of using heuristic and logic methods in business-process description, construction and evaluation of the business model are being regarded in this article. To visualize the practical usage of the described methods there will be given an example of the marketing system modeling, allowing choosing optimal marketing decision. The results of the modeling are shown in the database MS ACCESS. Analysis and choice of the marketing decisions is realized in MS EXCEL.

Business process description

To describe business processes the following set of characteristics can be used: mission of the model (view of business process, reflected in the model); purpose of the model; diagrams - the models of the business processes; activities (works, transformation functions) as business processes elements; groups of objects with respect to activities (inputting, outputting, operating and mechanisms): objects taking part in the business processes; set of connections of the inputting objects with outputting objects with the help of transformation functions; conformity of the transformation functions to the set of rules.

Among the set of all objects one can pick out the following: the list of all objects which are transformed by the activities and define them as inputs; list of objects, got as a result of transformation and define them as codes of outputs; list of objects (list of rules), operating the transformation (business processes), and define them as operation; the list of objects, providing transformation and define them as mechanism.

On modeling of the business processes five main types of objects are regarded: material flows; financial flows (cash and non-cash, investments and etc.); documents flow (commercial, financial and organizational documents); information flows (information, intention data, verbal orders and etc.); resources (staff, machines and etc.) [1]. Each type of the objects takes part in the definite modeling from the following list: organizational; processing; financial; strategic.

Business process can be regarded as a system, consisting of separate simpler business processes; each is presented by the separate model [2]. In general case the model of

such system includes several a few models of the business processes. In special case the system may consist of one business process.

Business model construction

On modeling business processes the general rule of the construction of the any subject domain infological model on the base of the three main points triad: object, properties of the object, meaning of the properties.

Business process or business operation is understood as an object, business processes characteristics – object properties, meaning of the characteristics - meaning of the properties. Business process is described as a set of works and operations with objects by decomposing. Each process is connected and processes its objects. As a result of fulfillment of the operation the object is transformed, that is it changes its initial state. The result of the object transformation depends on the object type. For example, if the document is regarded as an object, then the result of its transformation can be edited inputting document relative to the transformation operation or a new document. Business process modeling starts from the two lists preparation: functions, works, operations; objects, the described functions are cooperating with.

Using the methodology of the logical key rules [3], to describe the function there is used a diagram where inputting and outputting objects, resources and instructions (rules) necessary to fulfill that function are reflected. The business process model is a set of hierarchically connected and regulated diagrams; each of those is a specification of the previous higher-level function. The diagram of the higher level consists of one functional block, defining the general function of the modeled process. Diagram of the lowest level describes the special operations. So the business processes model will be a diagrams tree. The movement along the branches from the low level to the higher level provides the feedback of the operation with initial business process. The construction of the model depends on the view of learnt process. For example, to regard the process there can be chosen the boss or employee of the department where the modeled process is performed view. If the process is regarded from the point of view of the employee then the process will be detailed up to the specific works and operations level in which the employee takes part. In case the process is regarded from the view of the boss the functions of the process will be shown in the model. On describing the process it is recommended to go from the function towards the specific works or operations. So depending on the view of regarding the process the level of its detailing will be different.

M – is the system S model, if M answers all the questions about the system S with the specified precision.

Empirical and logical methods are applied in an evaluation case study. Empirical and logical testing is complementary to each other. Both types of methods are applied for system verification, validation and user acceptance testing [3]. The verification of these systems is carried out to determine their internal self-consistency and completeness. Such models are typically based on the prototyping methodology and iterate through stages of specification, knowledge acquisition, implementation and evaluation.

On describing the system its borders are defined – enterprise departments, department's bosses' point of view. On carrying out the system analysis of the business processes different types or combinations of modeling methods can be used on the initial level of the

modeling. The choice of the specific type of the model to describe the enterprise business processes.

Modeling of the marketing system as an example of the business model

As an example of the business model construction the marketing system [4] is regarded. Modeling of the marketing system is realized by the statistic test (Monte-Karl method). First the marketing structure processes are modeled, choice of the marketing elements and occasional values, characterizing the sources of the marketing elements and expenses values for every element of the marketing in the reserve of the chosen source.

Marketing system modeling starts from the graphic scheme, showing the content of the marketing operations. The main connections characterizing marketing system structure are shown. On creating the marketing system model the automatic classification methods allowing making up the map of the business process: results of the operation, resources necessary for their fulfillment and connections among them, are used.

The modeled system behavior in time is being planned. The results of the marketing operations of the dealer firm on programming products selling modeling are shown. The structure and data of the marketing system modeling are shown in the database MS ACCESS.

The choice of the optimal marketing solution brings to the solving of the optimization task, including maximization of the principal function at set limits on the admissible solutions. The characteristic data of the marketing systems and all possible marketing solutions are in the database. The analysis of the marketing solutions is realized in MS EXCEL. To choose the optimal solution the scripts mode is used and the search of the best solution at set limits. In that case the search of the optimal marketing solution is realized on the base of the logic key functions.

On planning the marketing system behavior during a time period it is necessary to realize the search of the optimal marketing solution by the dynamic programming method. To fulfill the procedure of the dynamic programming the variety of possible meanings of the marketing system state step operating and variety of the corresponding meanings for the payoff function at each separate step are set. While solving this task heuristic methods considering specificity of particular marketing system are used.

References

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