

THE USE OF CASE TOOLS FOR MODELING AS A SUPPORT FOR INFORMATION SYSTEM DESIGN

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ABSTRACT

Analysis, definition and business processes modeling are all realized by the top-to -down method, starting from the precise setting of the business process goals and resources, which are used to define necessary elements for the information system designing. Models of business processes enable the clear, precise and unambiguous definition of business processes for which the CASE tools are used. The paper deals with the use of CASE tools for modeling of Mirosoft Viso, BPwin RationalRouse with an example of a sales process. The result of this work involves defining sales activities with appropriate diagrams and the pre-established sequence of steps in the processes that are the basis for the design of information subsystem and its user interface.

Keywords: CASE tools, Mirosoft Viso, and Bpwin,UML

1. INTRODUCTION

For modeling processes suitable CASE tools (Computer Aided Software Engineering) are developed that are the standard for functional modeling IDEF0 (Integrated Computer Automated Manufacturing Definition). Each activity, which is used to transfer the defined inputs into outcomes, can be seen as a process. Each activity that has inputs and transforms them into outcomes is a process, thus all production activities and/or services are in fact processes.

2. PROCESS FLOW DIAGRAM

This type of a diagram is used to define the order and the relation of the certain operations which make an activity. In that way, the process and relation between the steps of the process is documented, which is one of the requirements of the quality system management according to ISO 9001 standard. The process approach is one of the eight principles of the quality system management ISO 9001 [1,2], which reads that a desirable outcome becomes more effective when the connected resources and activities are managed as a process. In figure 1 a process flow diagram for Sale is given.

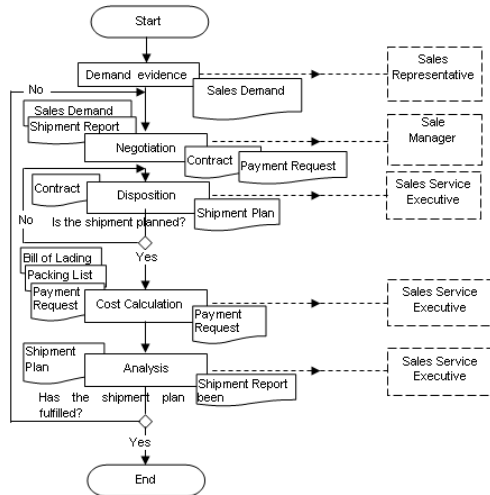


Figure 1. Sale process flow diagram

3. FUNCTIONAL MODEL OF THE SALES PROCESS

The standard for functional modeling, realized by BPwin CASE tool, is a graphic language which allows us to describe a process according to demands of ISO 9001 standard, i.e. it allows us to define business functions, as well as their subject business operations, processes and activities.

Data modeling is our abstract view on the real system case, that is a defining process of data structure. A data model is a simplified version of the real system by a set of objects (entities), objects's relations and relations between the objects's attributes [1].

This paper deals with an analysis of the sale process using a process model, the defined activity with the information needed for the realization of the process, as well as the relation between the functions. Further on, we have given an overview of the functional modeling of the sales process.

By using IDEF0 methodology, that is CASE tool BPwin, we perform functional modeling, which refers to functional decomposition that has these steps: defining limits of a system, defining the activity stem, defining the decomposition diagram.

3.1. Context diagram

Defining the context diagram is a limit of a mentioned model, that is, we are to define the system's limits, its frame of observation and the environment which affects the system.

From the point of view of the process approach, the observed system on its highest level is seen as one process, since it makes the whole. We are to define the inputs for the observed process which are necessary for successful realization, in the outcome form, from the aspect of end user.

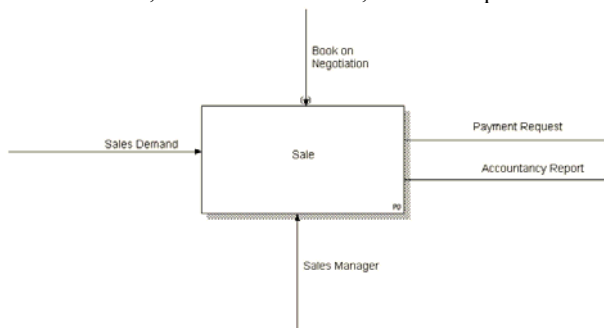


Figure 2. Context diagram of sale operations

3.2. Decomposition diagram

By using IDEF0 modeling technique we have shown the operations and activities connected to the sales process which consists of: Demand evidence, Negotiation, Disposition, Cost calculus, and Analysis. Demand evidence refers to the jobs connected to buyer's code maintainance, making demand for buying, its processing and finalizing. Negotiation process consists of contract formulation and its signing by a buyer and a seller. Disposition deals with delivery planning operations and its realization. Cost calculation consists of (in)voice formulation, control, and signing of the bill and its recording (accounting entry).

Analysis deals with designing periodical reports and control of the planned shipments.

This way of representing operations which are connected to the sale, immensely facilitates the procedure of tracing documents that is connected to negotiating, sales and product shipment.

Figure 3 shows a diagram of horizontal decomposition of the Sale process (decomposition diagram by IDEF0 methodology).

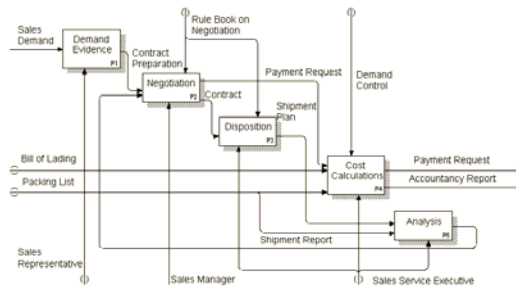


Figure 3. Decomposition sale process diagram by IDEF0 methodology

With further decomposition of every sale process which is given in figure 4, and referring to the activity stem, we get the processes that cannot be decomposed any more, but, by using the procedure of information modeling with demand defining from the documentation, we design a data model for the data base which is the basis of the information system for the observed part of business.

4. OBJECT-BASED MODELING OF THE SALES PROCESS

For object-based modeling of business processes we use UML standard (Unified Modeling Language), and the goal is to design a good professional model which will serve as a basis for the development of business intelligence software [3,4]. We will discuss the diagram of business cases of usage which happened during the mapping of business processes defined within the functional model given in figure 3. Figure 4 shows the diagram of business cases of usage which will be described further on.

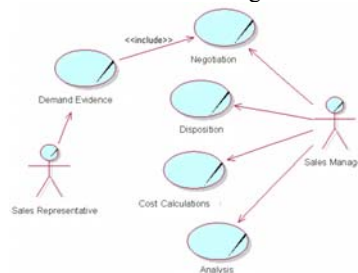


Figure 4. Diagram of business cases of usage

Business cases of usage which are dealt with here are connected to analysis which is necessary as a support in the decision-making process, and for the analysis of: application of demands within demand evidence, contracts, amount of the goods delivered to each buyer with every disposition, payments for the delivered goods, and cost calculation, planned shipments while analysis.

The business case of usage for sales will be described in the final part of the paper by using a business diagram of activities for the listed groups of activities.

Based on the official demand, the Sales Manager performs the activity of negotiation which, as an outcome, results in a contract and payment instructions, which act as an input for the activity of disposition and cost calculation. Figure 5 shows the diagram of the business activity of coal sale.

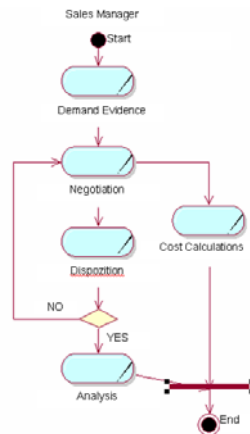


Figure 5. Business sales activity diagram

5. CONCLUSION

This paper deals with the process flow diagram, functional model process and object-based modeling of the sales process which allow easier tracking of interaction between processes by using graphic symbols, which results in better understanding of software contents than when listings with the source programs with commentaries are used. The most important benefit of the modeling process application is the proto-type approach where, in a fast and simple way, alternative ideas can be checked. This approach results in a common design model and is independent from the programming languages or software platforms in which the information system will later be implemented.

6. REFERENCES

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