

## **THE FUNCTIONAL MODEL FOR PLANNING PROCESS AS A SUPPORT TO THE DEVELOPMENT OF AN INFORMATION SUBSYSTEM**

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### **ABSTRACT**

*Planning represents the phase of the management processes that consists of making decisions about objectives, programs, plans and strategies which direct the entire activity of a firm as well as the operations which are kept continual by constant input of all the changes that are essential for functioning and development of the firm. The analysis of the realization of the plans, i.e. checking of the previously planned and the present condition is the foundation for the application of the corrective measures intended for establishing the desired previously planned condition. The result of these activities is a great amount of information and documents stored on various magnetic and optic media kept in different formats to maintain their storage. Therefore, it is necessary to define the model of planning process which enables clear, precise and accurate defining of the activities within the process of planning applying the functional modelling by CASE tools, which requires ISO 9001 standards. The aim of this paper is the presentation of the modelling process and planning data from the aspect of projecting the future applicative model.*

**Key words:** functional model of the planning process, CASE tools, applicative models

### **1. INTRODUCTION**

Management is a business process that directs an organization towards the desired aim starting from deciding and planning. Deciding and planning should enable predicting, organizing, ordering, coordination and control of all the processes within an organization. Therefore, these two processes are tightly connected. Planning represents the phase of the management process when the decisions upon aims, programs, planning and strategies are made and they direct the overall activities of the organization. Planning is creative logical process that predicts future which decreases uncertainty and risk in operating and development of the organization. Mutual connection among these processes can be represented by the functional model.

### **2. FUNCTIONAL MODEL OF DECIDING AND PLANNING PROCESSES**

Process approach is one of eight possible principles of the system for managing quality standard ISO 9001, which enables that the desired result should be fulfilled more efficiently when the resources and activities directed as the process are connected.

Standard for functional modeling IDEFO, has been realized using BPwin CASE tool. It is a graphical language that enables the description of the process according to the standard ISO 9001, i.e. it enables defining business function and the related business processes using decomposing diagrams process. On the decomposing diagram in Picture 1 mutual connection of deciding and planning processes has been shown using arrows which serve as bearers of pieces of information for modeling the data for applicative modeling.

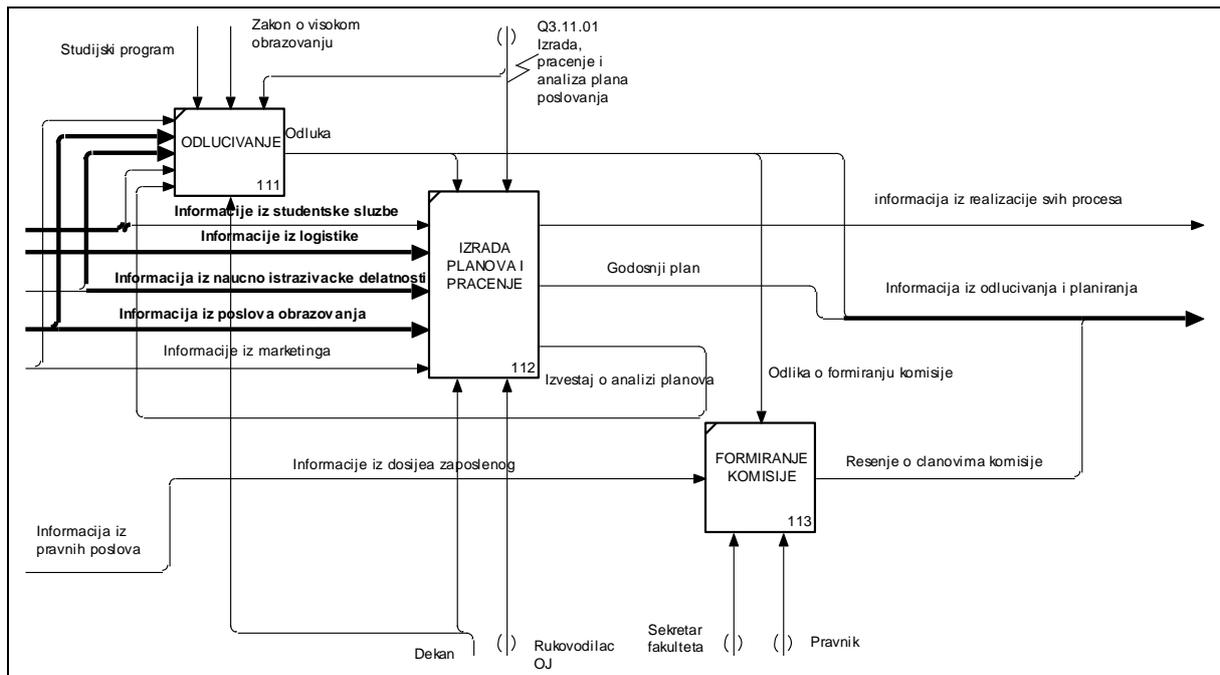


Figure 1. Decomposing diagram of deciding and planning processes

### 2.1. Deciding

Deciding is the process that is done in all the phases of an organization's operating. It starts when the necessity for making decisions is established. The result of the process are decisions which define the aims of the organization, means of fulfilling aims and the control of the results obtained in the process of setting the aims. One activity is also making plans and their monitoring.

The process of deciding is the same regardless the level of making decisions. Therefore, it has been presented as one process whose output is the decision.

### 2.2. Making plans and monitoring

Making plans and monitoring is the process which is done after making decisions. It includes the activity, necessary means, staff and time for fulfilling the aims which refer to the specified cataract, project, product or service.

Plans monitoring is connected with the comparison and analysis of planned and desired recommendation in order to notice any deviation. What has also been presented are the recommendations for a change or a supplement within the plans in case of the emerging changes in plans assumptions or undertaking the corrective measures due to emerging disturbances within the process of realization.. Planning includes the same order of the activities for making all kinds of plans and it has been shown as one process whose output is the Annual plan.

### 2.3. Forming committees

For many decisions it is necessary to form committees with members qualified in certain fields in order to reach appropriate decisions. Forming committees is a process which defines why such committee is needed, number of members, their roles and that is the reason it is presented as one process.

Adopted process approach for the base of information system projection is realized by a process model according to standard IDEF0. Such approach gives the structure of the application model which does not eliminate organizational units of the functional organization (sectors and services), but their unity is achieved with the process which are realized with the same order of activities.

## 3. APPLICATION MODEL FOR INFORMATION SUB-SYSTEM

Structure of the menu of the application model should be complement with functional model. Every item in the menu of the application model should be a process in the functional model, with whose starting we generate forms for creating record on the process, as it is presented in figure 2. Menu

system of user interface which defines the right of user's access to certain forms (generates, seals, reviews) which are complimentary to realization of the process, is in fact the matrix of the responsiveness of the process.



Figure 2. Structure of planning and decision-making menu

Running the item Plan design and monitoring should include the design of the annual plan and which consists of separate plans:

- Production plan
- Financial plan
- Plan of quality goals
- Plan of internal control etc.

and all other plans from other fields of company as given in figure 3.

QMS oznaka	Dokument QMS	Naziv forme:
Q4.3.11.02.2	Plan IP	GodišnjiPlanIP
Q4.3.11.02.3	Plan ciljeva kvaliteta	PlanCiljevaKvaliteta
Q4.3.11.02.4	Preisnivanje dokumenata QMS	PlanPreisnivanjaDokumQMS

Broj dokumenta:	IP01-08	Vrsta plana:	GodišnjiPlanIP	Godina:	2008
Oznaka:	Q4.3.11.02.2	Naziv plana:	Plan IP		
Vrsta IP:	Redovna	Organizacija:	DEKANAT FAKULTETA	Tim za proveru	
Cilj plana:	Provera usaglašenosti sa zahtevima standarda				
PlaniranPocetak:	25.01.2008	PlaniranKraj:	25.01.2008	Pregled Godišnjeg plana	
Otvorio:	dr Veljović Alimpije	Datum:	11.01.2008	Odobrio:	dr Živanić Jaroslav

Figure 3. Layout of the form of Annual plan

Access to certain entry starts a form for data input for a specific plan as it is shown in the figure an example of the annual plan of internal control, which generates the entry requested according to ISO 9001 standard.

#### 4. CONCLUSION

One of the beginning phases of projecting an information system is analysis of the real system of organization from the aspect of the process where it is necessary to collect information from existing documentation and standardize the process of production for which the same order of activities is needed. The standard methodology of projecting of information systems is supposed to provide the least possible data redundancy. By adopting a functional model of process display, a relationship between the models of the process based on the data represented with arrows, and the business rules of the monitored process.

The paper defines the request of the planning process through the functional modeling as a base for projecting application model which will allow better management and more efficient transactional data processing.

## **5. REFERENCES**

- [1] [www.idef.com](http://www.idef.com)
- [2] A.Veljović, N.Gojgić: Projektovanje baza podataka, VTŠ Čačak, 2006.
- [3] Paul Conway, Archival quality and long-term preservation: a research framework for validating the usefulness of digital surrogates, Arch Sci DOI 10.1007/s10502-011-9155-0
- [4] Basan, Franulović, Križan (2011) Web-based material data knowledge base and expert system, TMT 2011
- [5] Gašpar, Information lifecycle management as solution for continuous data availability, TMT 2011