

INITIATION AND PLANNING OF AN INFORMATION SYSTEM. A CASE STUDY.

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Abstract: Starting from the premise of the importance of the information system in the good development of the contemporary economic life, this paper proposes a presentation of the steps necessary to initiate and plan the process of creating an information system, focusing on the cascade model. The stages of the life cycle of an IT system are analyzed in part, along with their specific activities. The focus is on projects for the implementation of information systems, more precisely, on the processes of identification, selection, initiation, and planning of projects; identification of possible projects for the development of information systems; selection of these development projects. In terms of project planning, this paper is interested in all activities carried out in each stage: analysis and definition of requirements, logical design, technical design, implementation, and testing of the new system created construction, operation, and maintenance of the system.

JEL classification: C61, M15, M41, P41

Key words: SI - Information system, LF - life cycle, Implementation - selection, operation, maintenance, Project implementation, ERP – enterprise resource planning

1. INTRODUCTION

This paper focuses on the processes of initiation and planning of an informatics system, analyzing the stages of the life cycle of systems and the activities specific to these stages. The implementation of an ERP type information system brought to the companies a help and a greater visibility on the existing operations inside them. ERP systems are systems capable of managing all existing operations in a company, consisting of a series of modules designed to help the business environment. The Romanian literature of the domain (published in the last twenty years) was of great help.

Project identification, selection, initiation and planning

The identification and selection of IT systems development projects make up the first stage of the life cycle of systems development, which, along with project initiation and planning, is microanalysis, which is a component taken from project management (Vătui, 2000). It should be noted that the highlighting of these activities within the waterfall model of those phases of the system life cycle is the following: identification and selection of the project; project initiation and planning; analysis dedicated to the project; logical design; physical design; implementation; maintenance. Each such stage of realization of a certain computer system is broken down into several activities. This paper aims to analyze these steps.

Identifying potential development projects

The fundamental issue of the activity of identifying all possible projects for the development of the system is represented by the nomination process of those who may be able to make relevant proposals. These people can be: top managers, or the initiative committee, as well as the users' department, the development group (Vîrlan, 2004). In table 1 there are configured the main characteristics of the proposed project variants for the four situations.

Table 1. Strengths, Weaknesses, Opportunities and Threats research

Proposals	Project Selection Method	Project characteristics
Downward	Top managers	strong inclination towards strategy; largest project size largest project length
	Initiative committee	mixed inclination (of different representatives) interested with the biggest organizational changes analysis of project costs and advantages larger, riskier projects
Upward	Users' department	limited, without inclination towards strategy quicker fulfillment some users represent different levels of leadership or enterprise
	Development group	integration within the existing system little delays in project fulfillment less interested in cost - advantage analysis

2. LITERATURE REVIEW

Selection of information systems development projects

Due to the varied and multiple effects, as well as their amplitude, it is recommended to highlight separately the long-term and short-term projects. From these projects, only those that achieve the organization's objectives will be selected (Lungu & alt, 2003). Also, the way in which the projects align with the dynamics of the organization will be followed.

Initiation and planning of projects

In order for this phase to be accomplished, effective communication between the parties involved (analysts, clients - managers and user) is needed.

Initiation of the project

Once it has been selected from several projects, the selected project enters the initiation phase. This approach involves carrying out a laborious activity, to be performed

by a manager. This manager is known in practice as a project manager. The project manager is responsible for:

- Elaboration of some general feasibility studies;
- Elaboration of detailed project plans;
- Finding the best members of the project team.

The project manager must also demonstrate many other qualities in order to effectively manage elements such as the organization (Andronie, 2007):

- Technological changes;
- The life cycle of information systems;
- Contractors and suppliers - efficient communication;
- Human resources management - ensuring the efficiency of the organization;
- Various methodology and working tools;
- Time and resource constraints;
- Documentation internships and organizational communication strategies;
- Expectations of managers and clients.

The activities performed in the project initiation phase are:

- Establishing the composition of the project initiation team;
- Establishing an organizational policy capable of establishing good relations with the beneficiaries;
- Establishing the plan for initiating the project;
- Establishing the set of managerial procedures;
- Establishing the development framework for the project in question and the operation manual in this regard.

Project planning

Project planning is the stage that focuses on the process of evaluating the information requirements of the system at the level of the entire organization. Project planning is the distinct process by which the exact definition of all activities and efforts that are urgently needed in order to carry them out within each such project takes place (Oprea, 1999). The types of activities performed within the project planning can be divided into two major categories (Vârlan & alt, 2008): detailed description of the scope, all variants and feasibility of the project, on the one hand, and the breakdown of the project into several easily executable activities and controllable, on the other hand.

Within an information system, most activities can be performed using computer technology. Thus, the primary data can be processed so that later, the result can be transferred further to another compartment for proper processing. And the transfer process can be done electronically, using a computer network, or via a modem. All the elements that are involved in this comprehensive process of processing and transmitting the organization's own data electronically make up the computer system. In order to be able to realize the informatics system, a complex action is needed in which a number of activities automatically intervene, as follows:

1. Analysis and definition of requirements;
2. Logical design;
3. Technical design (physical);
4. Implementation and testing of the system;
5. Construction;
6. Operation;
7. Maintenance.

Informatics system - a complex actions - number of activities

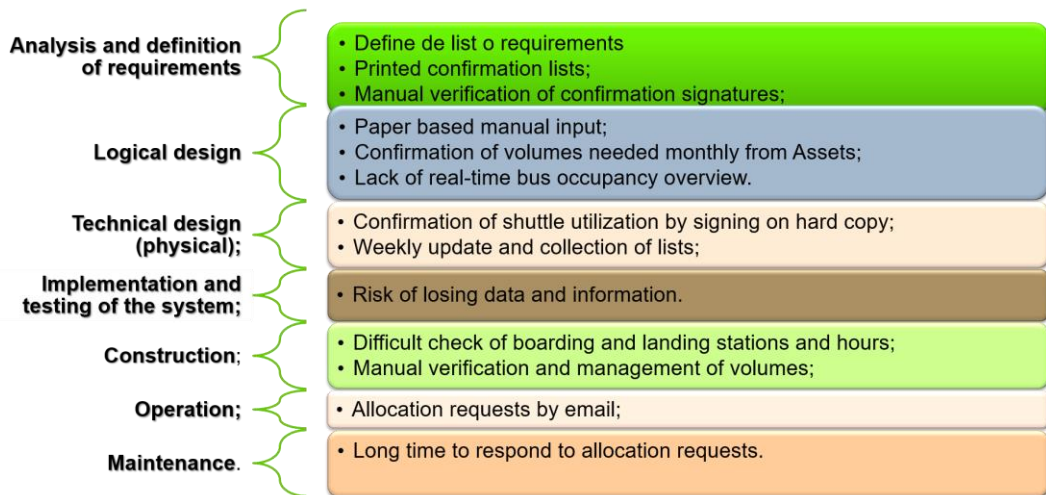


Figure no. 1 The architecture of the sales model of a product, using AI

In the initial stage (analysis and definition of requirements) it is examined the possibility of creating a new computer system - within the management information system - or the possibility of modifying the existing system. The main purpose of this stage is to answer the question of whether the new system, which we intend to introduce in the organization, is technically, economically and operationally appropriate (Bosksenbaum, 2002). In order to carry out a preliminary analysis there are three basic concepts:

- summary evaluation of the organization, in order to obtain a justification for the use of the calculation system;
- studying the objectives and areas of general and specific problems in the organization; thus it is tried to demonstrate the benefits that are brought after the implementation of the automation;
- a serious study of the organization in order to understand the organizational structure and its operation, but also its purpose and objectives. The approach of one of the concepts depends on several factors: the time allocated, the staff affected and the complexity of the works, the clear specification of the system objectives, the level of specialized training of the unit, management and staff able to introduce an information system.

The system to be designed refers both to the taking over, the processing, and to the display of the data regarding the calculation of the expenses destined to the association of each tenant. The computerized processing of all this data will facilitate the work of the operators, and will considerably reduce the time allocated to keeping the respective record.

The next stage is the logical design, a stage that has a threefold purpose: - establishing the logical requirements of the new system, by reference to the objectives to be achieved; (re)design of that information system, starting from the established requirements, by identifying those areas where the automatic data processing will take place; elaboration of the system definition items, which will represent the foundation on

which the next stage will be constituted (technical design). It can be stated that the logical design is a much more detailed examination of the elements that were initiated within the preliminary analysis, thus becoming the level of detail that would allow: - verifying that the proposed new system ensures the achievement of objectives; issuing a report of costs, but also of benefits (quantitative and qualitative) that can support the management in making the decision regarding the continuation of the works. Through all the activities that take place in this stage, the logical and possible processing that will be performed in the new information system must be determined.

The next stage, technical design (physical design), finalizes the technical means necessary for the activity (programs, equipment, files, manual procedures) through which the previously established information flow can be transformed into a flow defined by automatic data processing. The main activity is, therefore, the elaboration of some items (called realization specifications) for all the basic components of the information system and for all the procedures of interface with the respective information system. The main effort consists in the design process, the emphasis must be placed on the quality of the specifications prepared, in order to ensure all the necessary elements in order to achieve appropriate results in the next stages. If in the logical design stage it is finalized, first of all what needs to be done, now it is decided how to do it. The technical design is divided into two distinct sub-stages: -designing the system with the elaboration of the realization specifications (finalizing the technical solutions) at system level.

The implementation and testing of the newly created system follows.

This stage begins when all the individual components, which have been tested and accepted, can be assembled for testing and inclusion in the system / subsystem, based on the specifications and manuals that were developed in the previous stage. At this point it is necessary to go back to change some results from the previous steps. The stage ends only when the system or subsystem is fully accepted by the organization, being received by the operating department, along with the final documentation.

The building phase

It should be noted that after the realization specifications have been compiled and approved, they will be distributed to various groups of specialists responsible for their execution / construction and subsequently their assembly. The stage includes actions to purchase all the necessary equipment and start their installation. The individual writing and testing of the set of programs and manual procedures follows, the specialists subsequently focusing on starting to fill the files / database with data, and on drawing up the first form of the system documentation / manuals. It can be said that the exploitation phase starts to take place when the beneficiary receives information in a current and regular way.

The maintenance phase takes place in parallel with the operation stage, begins with it and ends with it. The main activities of this stage are: highlighting all the needs for change, periodically collecting proposals for changes, with a precise justification of each. checking the possibilities of making changes, with the establishment of the necessary resources in each case, approving the changes, through the established approval mechanism, making and introducing the accepted changes.

3. CONCLUSIONS

Designing the implementation of an information system involves several steps, the authors want to highlight the existing steps in several projects implemented in Romania. Although certain steps are sometimes skipped in the implementation projects, a proportion of 80% of those presented by the authors, are found in major implementation projects. We

can discuss computer systems such as SAP, Oracle, Emsys, CIEL or SIVECO, these have as implementation steps those described above, in this article, which aims to highlight the literature and a highlight of steps found in such a project. Certain information systems of ERP type - Enterprise Resource Planning - come with their own implementation methodologies, these being a guarantor in good development of the implementation project chosen by a partner company. Keep in mind that the methodologies from the company that produced the computer system come from the existing case studies in the history of the software company producing the ERP system. In our country a large proportion, ~ 65% of the implementation projects are carried out by collaborating companies of companies producing information systems, also having their own implementation methodologies, the steps described above in the article, being part of them. Regarding the existing costs in the implementation projects, the most expensive phase is the implementation and testing of the newly created system follows.

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