

Factors of Successful Realization of Business Information Projects in Russia

Andrei Gagarin¹; Andrei Miroloubov²

¹Professor, Dr.Sc.(Math.), ²Associate professor, Ph.D (Ec.), International Graduate Business School, St.-Petersburg State Polytechnical University

Abstract

A set of components has been suggested with the help of which the effectiveness of a project of the enterprise complex informatization has been evaluated. There are three following components:

- the time period necessary for the project goals realization;
- the necessary material and human resources;
- the level of the project quality which are to be achieved.

The investigation which took place at some Russian enterprises proved that these parameters were basic when the effectiveness of the information project realization was evaluated.

Keywords

information project (IT project), quality and resources components, terms of project implementation, interactivity level, motivation system

Introduction

The process of realization of enterprise information projects needs to achieve certain conformity between 3 key parameters - *resources of the project, the quality of the project and the time of its implementation*. The complexity of achievement of the given purpose is that each of these parameters includes many components, and only a part of them have a precise formalized character and can be proved methodologically. Other components have creative character as they are based on personal experience and knowledge of the personnel and designers. Therefore they should be changed considerably for application on the other project. The role of separate components of information project implementation at Russian enterprises is discussed in this paper.

Quality as a parameter of information project realization

This parameter can be described by the following set of components:

The purposes of the information project ;

- A set of parameters of goal achievement of the information project (including parameters reflects the project efficiency estimation);
- A set of necessary changes in the business - processes to achieve of project goals;
- A set of risks of realization of the information project and the ways of their minimization.

As it was mentioned by many economical studies (Hammer & Champi 1993, Leach 2000, Meredith 2000, Laudon & Laudon 2002), the majority of realized information projects is characterized by two sets of goals - namely, formalized as a set of standard economic and financial parameters (for example, reduction of warehouse stocks, reduction of expenditures of labor, reduction of costs etc), and the goals that cannot be formalized but also are of a great value for the development of business. For example, in realization of the IT project of complex automation at Perm Research-and-Production Instruments Company (**PNPIC**) one of the goals of the project was determined as follows - “to provide a transparent information environment for strategic and administrative decisions at all levels of the enterprise”. Experience shows that one of the main conditions of successful realization of a project in the presence of similar non-formalizable goals is to achieve the balance of interests between all top-managers of the company. However, such balance makes a new problem – the necessity to balance these goals at a functional managers level, who are involved into the project and capable to affect it. As a result, there is appears an effect of summarizing these goals. Therefore, it is necessary to determine and realize concrete methods of personnel stimulation to participate in the project.

The precise formulation and statement of parameters of achievement of the project goals are necessary for its success. As it has already been marked, it is necessary to achieve a reasonable unique combination of economic and qualitative indicators for each case. Then these indicators can be used for the current monitoring of operational characteristics of a system. They include, for example, indicators of productivity of the automated sites, cutting the time specifications for order processing or serving the client, improvement of quality of merchant account and others.

Certainly, on of the major points of project realization is the coordination of schedule and forms of payment of services for the performed work over a given project with the customer and the consultant. There are two basic forms of payment the consulting services - *fixed price* and *times&materials*. The choice of a form depends on a concrete understanding of goals of consulting and proper documentation base.

Resources as a parameter of information project realization

The parameter is described by the following set of components:

- Supply of the project with human resources (own and involved);
- Level of experience of project group stuff;
- Conditions and procedure of a choice of the consultant;
- Distribution of works over the project between own and involved personnel;
- Risks of the information project realization and ways of their minimization.

The basic component of parameter *resources of the information project* is the qualifying level of the project group, and the primary goal of participants of the project group is to transfer the knowledge of advantages of the project information system and culture of work with the means of automation inside of the company.

It means that quality of work of project group stuff and the culture of users of project are strongly connected.

For preparation of their own experts for the project group of a company it is necessary to use all available company resources. It is necessary to find the people inside the company who are capable to think in terms of process and have their own vision of business development in the company. Criteria of selection of experts in the project group will be the following: the knowledge of a subject domain, the ability to describe business-process, to analyze it, skill offer and prove new models of realization of business-processes. A decision of question of forming the project group demands from a management a flexibility and readiness to go on serious compromise. Thus, the major problem of using of enterprise resources becomes personnel motivation to participate in the information project. It is necessary for the management to use all available means for involving employees in the project. One of the major means for this purpose is the *system of personal training*. Properly trained and motivated personnel can independently solve all problems on development information system.

For the risk analysis of realization information project realization at the enterprise and their minimization the following items can be offered:

- Situational modeling of the processes of input of information system in operation with the equipment of the firm - adviser;
- Duplication of the most crucial tasks that are subject of automation;
- Preliminary informing of contractors of the enterprise about all changes in operative activity and the prospects of interaction as a result of information project.

Potential threat to information project realization can happen as a result of not favorable enough attitude to it of users when the innovations introduced in their work by new technologies do not correspond to their interests. In order to get an appreciable material effect from automation of the control system it is necessary for the enterprise head to make the employees believe that it would be better not only for the enterprise but also for each of the individual who support the process of re-organization.

Estimation of expenses for information project realization

Investments into information system of enterprise usually require the following groups of expenses:

- Purchase of the Base Software: operational systems, Data Base platforms ;
- Purchase of ERP system;
- Training of enterprise personnel;
- Payment for consulting services and starting of the project into operation;
- Purchase of automation equipment (computers and other peripheral devices) and installation of local computer networks;
- Maintenance of communication network for interaction with subsidiaries;
- ERP system technical support.

The calculation of expenses for automation for each of the groups is a typically financial problem. More complicated question is the substantiation of expediency of planned expenses. From the economic point of view, the obvious benefit from realization of the information project is the difference between the received effect and the total expenses. As it has been already mentioned, the true estimation of the received effect can be made only by the

administration of the enterprise when comparing the achieved results with the aims that were given for the perfecting control system. The preliminary estimation of an economic effect, which the enterprise can receive from automation of procedures of management, is carried out by expert methods.

Expert estimations of possible decrease in expenses and economic gain from automation of procedures of management for the concrete enterprise are usually formed at the stage of carrying out consulting work. The methodology of calculating of economic efficiency is usually based on the comparative analysis of parameters of the business-processes describing concrete sources of efficiency.

At the first stage of analysis is carried out an interrogation of the basic users of the enterprise to gather data about consequences of changes of information technologies suggested by consultants. Interrogation allows finding out item by item those materials and qualitative benefits which users expect from automation of each business-process, and also existing risks. The revealed benefits are consistently translated from technical terms into economic indexes. The interrogation by-product may become the estimation of the personnel and the selection of candidates for a group of introduction of new information technologies.

Modeling of existing processes, which should be improved and automated, is the second stage of analysis of economic efficiency. Here it is estimated:

- A share of each business-process which is being automated in a total volume of expenses for automation;
- The relative contribution of every business-process which is being automated in an summarizing effect.

Having got the above estimations it becomes possible to pass on to a planning stage of time expenses for automation, which includes the following components:

- the determination of the earliest moment of time beginning with which it is possible to receive a profit from financial investments enclosed in automation of each business-process;
- Formation and getting approval of the optimum schedule of expenses (according to criterion - expenses to result).

As an example of scheduling and a substantiation of efficiency of expenses for realization of an information project of complex automation the case of the Russian enterprise “*Inguletsk Ore Dressing Combine*” is analyzed and reviewed, in this study, on the basis of the Russian ERP system integrator (corporation “*Galaktika*”).

According to the plan of work performance, the given project has been divided into two stages. At the first stage the work on automation of processes of supply, selling and management interrelations on payment with external suppliers and buyers have been paid attention. It was in the given processes that at inspection of the enterprise the maximum quantity of problems and irrationally used resources were revealed. At the second stage the automation of all other business-processes of the enterprise (production management, management of repairs, planning, personnel registration, etc.) has been done. The structure of the information project is submitted in **Tab. 1**.

According to the estimations made in the project, the automation of the business-processes chosen for realization at the first stage, demanded about 7 months of work and 35 % of a total volume of expenses. The experimental exploitation of working places handed over to industry was to begin since the 7th month. The full result from introduction of new first-order business - processes was expected since 9-th month after the beginning of work. The contribution of work of the first stage to a complete effect should make ~80 %.

The peak of expenses for the work on the second stage had to take place during 9-12 months since the beginning of work that is already after occurrence of the result from the investments made in automation of the first stage. Thus, financing of second-order work, mainly, was carried out due to the effect which had been achieved during the first stage. Hence, it is possible to speak about an optimality of the considered plan-schedule of work for the enterprise.

The analysis of statistics of projects carried out earlier on the basis of Corporate Information System " *Galaktika*" shows the following results:

- The average percentage of decrease of conditional-constant expenses makes not less than 5 %;
- Reduction of the time for turnover of working capital can reach 12%;
- The level of illiquid stocks in a warehouse is reduced to 10-20 %;
- The general decrease in expenses can make up to 15 % from an annual turnover of the enterprise.

The significant variation in the results received by various enterprises depends on many reasons. The basic of them are:

- The degree of an organizational maturity of the enterprise;
- Presence of terms necessary for effect reception;
- The chosen schedule of the implementation of ERP system

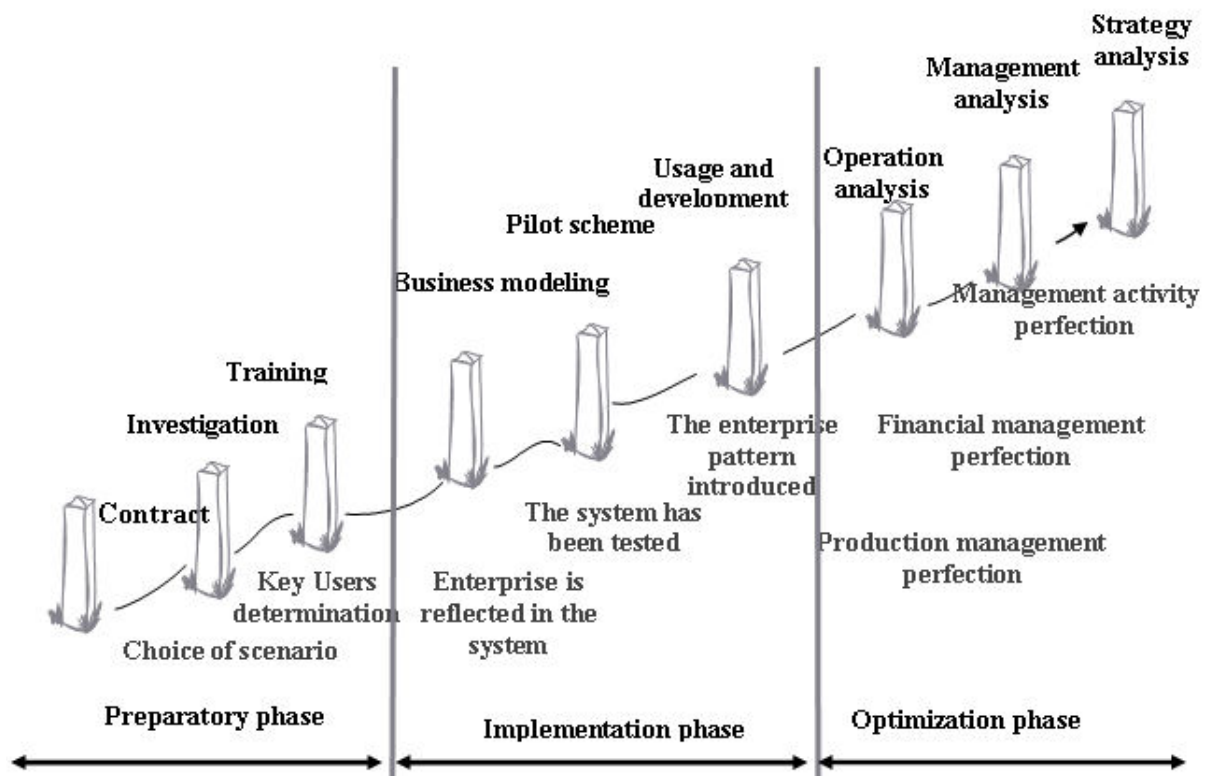


Figure 1. Sequence of realization of the information project at the enterprise

Table 1. A structure of information project of Inguletzk Ore Dressing Combine

The name of the program module	Number of licenses	Intermediate results
Management of contracts	15	In operation
Management of supply	30	In operation
Sales management	30	In operation
Management of the warehouse account	30	In operation
Suppliers addressees	30	In operation
Materials account in manufactures	19	Start in operation
Book keeping contour	28	In operation
The account of bills and credits	7	In operation
The account of overalls	4	Preparation for start
Technical and economic planning	3	Start in operation
Calculation of actual expenses	3	Preparation for start
Calculation of the salary	2	Preparation for start
Registration of personnel	2	Start in operation
Financial and product analysis	3	Preparation for start
Repairs management	4	Preparation for start
Means of administration & support	14	In operation
TOTAL integrated licenses:	136	184 users

Time as a parameter of realization of the information project

The parameter is described by the following set of components:

- The basic time resource for realization of the project according to the authorized introduction plan;
- An additional time resource for correction of reproofs and completing some items of the project revealed during its pre-production operation;
- Means of additional motivation of the personnel for reduction of the basic time resource
- Means of realization of the information project

The reduction of the time of realization of the information project becomes a more and more significant parameter determining the activity efficiency of its participants. Thus the tendency of reduction in functionality and the level of detailed elaboration of design decisions in comparison with planned values on the design stage or the introduction of the system is noticed. As an example the schedule of use of time resources at realization of the information project of *Baltic Sudostroitelny Zavod (St-Petersburg)* is given in Fig. 2.

At realization of the information project it seems important to us to take into account the following aspects of planning of time resources:

- The correct choice of the time period of introduction of **ERP**. The calculation of parameters of efficiency of introduced information system is necessary to coordinate with periodicity of updating of information technologies at the enterprise.
- The reduction of system effectiveness in the management during the introduction of **ERP**. This phenomenon arises because of inevitable increase of loading on enterprise employees as, besides performing of the usual working duties, it is necessary for employees to master new knowledge and technologies, and also during pre-production operation and at transition to commercial operation it is necessary to keep account both in new and in old systems. It can also increase the actual period of introduction of the information project.
- At realization of the project of complex information of the enterprise the maximal display of synergetic effect is displaced to the end of the process of mastering of **ERP** when the majority of business - processes of economic system are integrated.

The experience of information projects realization at the Russian enterprises shows that a strict observance of the schedule of work probably is basically possible by attraction to the project of additional resources, first of all, human. A necessary condition for this purpose is creation of a system of additional motivation for participants of the project - advisers, members of design group and other personnel of the enterprise directly occupied in the project.

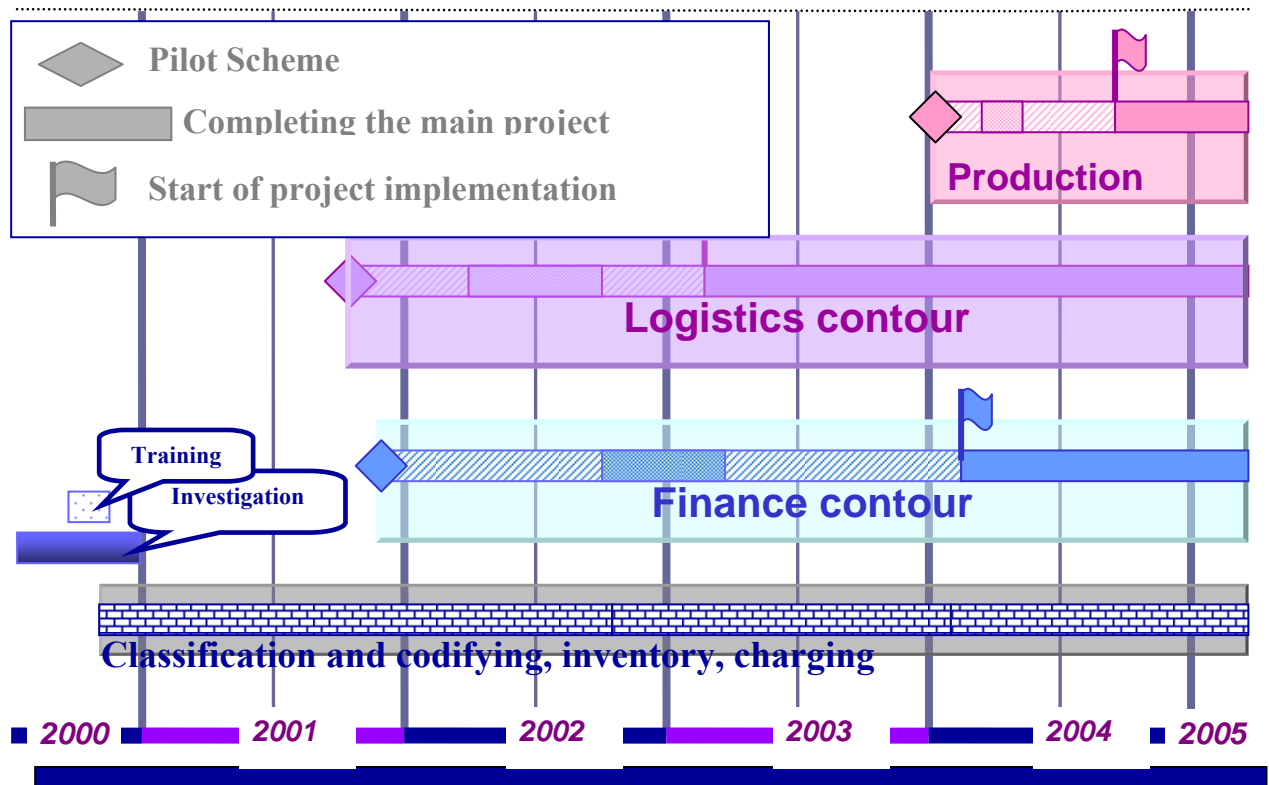


Figure 2. Required time resources of the project of complex information of the enterprise Baltic Sudistroitelny Zavod on the basis of ERP BAAN IV

Conclusions

The majority of difficulties which IT-projects have can be overcome by various administrative decisions. As problems arise management will look for ways to reduce negative consequences and to remove the source of these problems, however the stress which develops during these moments, usually changes the course of the project.

The variants of the problems decision are usually reduced to one of the following:

- Decrease of the amount delivered to users opportunities;
- Use of a roundabout maneuver of the problem decision;
- Decrease in requirements at subsystems testing so as not to be behind schedule.

Roundabout maneuvers and standards decrease at testing are based on the same idea - the problem should be completely and correctly solved, but now there is no time for it. Roundabout maneuver, as a rule, is accompanied by the promise to return to the problem next time and to do all as it is necessary. Unfortunately, in practice the probability of returning to the decision of this problem is close to zero.

All this shows, that steps which should be taken for the situation correcting and different variations of them in other parts of the project should be thought attentively. Otherwise there

will be nothing left very quickly of the initial plan of the project. The plan of the project should be flexible enough to make possible such interventions.

The participants of the design group ability to look for and to find conciliatory decisions between standard opportunities of information system and additional development is defined by the conformity of realization factors of the information project - resources, quality and time that provides successful introduction of information system at the enterprise of the customer.

References

- ERP in hypermarket format . // Firm' Secret, # 13, 2005.
Information Technologies for Management : round table Iss.//Problemy Teorii I Praktiki Upravljenja.# 5, 2004.
Kostjakov S. Project Success as the geometry rule. //Corporate Systems, #4, 2005.
Coveney M., Ganster D., Hartlen B., King D. The Strategy Gap. John & Sons, 2003.
Laudon K., Laudon J. Management Information Systems. 6th. ed. Prentice Hall, 2002.
Leach L.P. Critical Chain Project Management. 2000.
Meredith J.R. Project Management. 2000.