

# Establishment and Management of Internal Control Information System: Organizational and Socio-Psychological Factors

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## Abstract

Development and implementation of modern information systems are related with the analysis of a wealth of problems of organizational, systematic, hardware and software nature. Implementation of information system in the organization troubleshoots technical and managerial problems, yet brings about those caused by human factor. This article analyzes the matters related with implementation of a specialized information system of internal control and audit in terms of the effects of organizational and socio-psychological factors. Implementation of such system involves inevitably the controversial and conflict situations between both the organization insiders and representatives of the Customer and Performer. Successful implementation of information system requires a scrupulous attitude to organizational and socio-psychological factors. Besides, this paper deals with such factors as directorship attitude, readiness for changing of management processes, adequate comprehension of information system possibilities, relieving conflicts and clashes, and interaction at the stage of B-testing. It describes the influence of every factor on implementation process and pinpoints the ways of solving of originating problems. It is shown that insufficient attention of said factors can retard the processes of development and implementation of information system right up to a complete fault. Pacing factor in successful implementation of information system consists in the support and control by organization directorship over all planned activities. Line managers play a critical role in successful implementation. Keystone of implementation of planned targets consists in comprehension by said line managers of the fact that overall system in internal management and audit can be efficient only if sufficiently automated.

**Keywords:** Implementation of information system, organizational factors, socio-psychological factors, attitude of

directorship, conflicts, antinomies, implementation medium, internal control.

## INTRODUCTION

Modern corporative information systems (IS) covers the automation of a notable spectrum of the lines of financing and operating activities of the organization [1, 2]. As a rule, these include, as a whole, typical workloads related with purchases, sales, marketing, management, nest cost calculation, budgeting, forecasting and other organization activities analysis and accounting problems [3]. Apart from these issues, organization of internal control and audit makes an integral part of the organization financing and operating activities. Information systems meant for solving of this problem are, at present, not that typical or widespread which is why such IS may be called a specialized one.

Determination of internal control is generally accepted as the system of measures organized by organization leadership and realized in the organization for efficient fulfillment by all workers of their responsibilities at performing the financing and operating activities [4]. One of the main elements of the internal control and audit system is composed by a control medium [5] built, first on all, around the organizational principles [6].

Provisions of technical issues of organization, designing, development, implementation and operation of specialized IS are common for construction of most accounting task-oriented ISs and have been worked out and described in vast amount of procedures, standards, normative documents and other papers related with IS designing [7, 8].

At the same time, there are *organizational and socio-psychological factors* of control over IS development and implementation that make some critical factors of information

support of the internal control and audit systems. Socio-psychological factor are sometimes called “a human factor”. Formulation of these factors is extremely important, yet it is frequently either neglected at or omitted completely from scheduling the IS implementation. This fact is particularly important for information support of the internal control and audit system of the organization the control medium of which is also based on organizational and socio-psychological principles [9, 10].

Organizational, social, personal factors of IS development and implementation as well as factors or risks related therewith are covered in [11, 12]. This paper attempts to generalize these factors in terms of the development and implementation of specialized IS.

### **ORGANIZATIONAL AND SOCIO-PSYCHOLOGICAL FACTORS**

Experience of IS implementation has displayed that specialized IS successful development and implementation frequently results not only and not so much from technical characteristics, power and versatility of developed or purchased IS. Largely, the defining factor consists in the attitude of leadership, administration and employees to unavoidable difficulties, disadvantages, disputable or conflict situations, costs of extra time and other nontechnical problems, which go with the IS implementation and operation. Resistance to innovations may result from both personal aversion by employees and leaders and organizational complexities at different stages of problem definition and implementation.

Importance of these factors can be all the more significant at implementation of the internal control and audit system since the latter aims at exercising control over personal errors of employees. To minimize adverse effects of these factors, it is expedient to define the following *organizational and socio-psychological factors* of IS development and implementation:

- attitude of leadership to IS on the whole and support for it implementation and operation at all stages;
- readiness to modification of management processes;
- creation of combined working groups of specialists;
- adequate comprehension of IS potential and implementation process;
- resolving conflicts and contradictions;
- interaction at the b-test stage.

#### **Let us analyze these factor in more details.**

Attitude of leadership to IS on the whole and support for it implementation and operation at all stages

Understanding by the leadership of implementation of comprehensive internal control and audit in all structural branches causes no doubts. However, it is not impossible that not quite correct understanding can originate of the purposes and tasks of the IS implementation as well as that of IS position in general system of managerial processes automation. Information technologies represent only an accounting and control tool for the purposes of internal control and audit. These are not “a red button”, which if depressed, automatically helps achieve the object.

The most important condition for IS implementation consists in the support and control by leadership of all planned activities related with IS development and implementation at all stages. Relegating of these functions to automation or engineering support departments can bring about omissions in gaining the target goals and general dissatisfaction of the results. Engineering services, by definition, are far from comprehension of the reality of problems, features and subtleties of internal control and audit, and enjoy no management responsibilities in vertical and horizontal structural departments of the organization. Therefore, IS implementation can become a protracted nature, up to the threat of frustration.

Line managers play a critical role, if not a decisive, in IS successful implementation. Their understanding that the medium of all-round control may not originate without the development of automation means is, in fact, the pledge of target goal achievement.

#### **Readiness to modification of management processes**

One of the purposes of internal control and audit consists in the analysis of information flows aiming at revealing bottlenecks in data processing. In this case the necessity can originate in the change of managerial processes for increase in efficiency of operation of structural departments. Such situations are not simple for solving since violation of firmly established working rules is a painful procedure. At the same time, fundamental readiness of leadership for changing the managerial processes will guarantee the improvement of the organization functioning and confirmation of the internal control and audit system implementation expediency. Degree of changing the firmly established styles and managerial processes performance can vary from minor improvements to complete reengineering of control systems by the organization.

#### **Creation of combined working groups of specialists**

Implementation if performed by the group of specialists including the representatives of IS Customer and Performer (IS designer). Apart from technical specialists the Customer should assign qualified representatives of various functional departments authorized for execution of internal control and

audit functions. Heads of these departments should be obligatorily included therein.

Work in said combined groups is an obligatory condition for implementation, since the success can be ensured only by joint efforts of the Customer and Performer. Joint activity allows supervising the terms of stages, distribution of efforts, course of work, correction of plans till refinement and changing of initial statement of work related to IS. Work results are documented and presented in the form of reports to top management.

Schedule chart of the meetings of working groups is drawn up. Results of meetings are used to make managerial decisions as to project execution process obligatory for fulfillment by the Customer and Performer.

Special attention is paid by the Customer to interrelations with the workers of the Performer engineering services. Additional works with them is required for transfer of technical documents on IS, clarification of principles of work and IS architecture construction, as well as familiarization with the system administration procedures. The Customer technical specialists will take the IS on themselves after implementation, deal with its current support, development of new specific reports, extra training of users, possible variation and writing of new data processing algorithm, and etc. Good working contacts of the designers with the Customer technical specialists are a pledge for successful termination of implementation and further stable operation of the system.

### **Adequate comprehension of IS potential and implementation process**

All personnel of the organization should grasp the potential of implemented internal control and audit IS and objectively evaluate the process of its implementation. Employees may not influence the decision of leadership on system implementation, but their positive or negative relation to this process can notably facilitate or complicate the course of work. To organize a positive atmosphere for implementation among the employees, adequate measures should be taken.

Prior to implementing, it is necessary to inform the employees about developed concept of internal control and audit. Every employee should perfectly know its position in the internal control and audit system, liability for the results of his/her work, as well as the way whereby this system will be able to up the efficiency of organization activities on the whole. IS potential designed for automation of internal control and audit processes automation are explained separately. Stages of system implementation and roles of employees at these stages are analyzed. Problems that can be encountered herewith and procedures of their elimination are specified. It is important to sensitize, first, the personnel for objective attitude to possible problems, to concentrate employees on inhibition of negative personnel factors display, to create in advance the interest in

the results of work and tolerance to difficulties of implementation and trial operation stage.

The system of all around control covers each employee. Therefore, implementation process will, thus or otherwise, touch all personnel of the organization structural departments. It is necessary to develop the set of measures to display the course of implementation works, to inform the employees on the results, originating problems and ways of their solution. The protocols of the Customer and Performer working groups are used by the heads of departments to discuss the implementation process with their subordinates. This creates the atmosphere of involvement of each team member in executed works.

### **Resolving conflicts and contradictions**

Very important are close trust-based relationships between the Customer and performer that promote the overcoming of occurring conflicts and contradictions.

Conflicts can spring up due to various possible reasons. Someone of employees opposes the implementation of internal control at his/her workplace and boycotts the implementation; somebody fails to cope with extra load of internal control, while somebody gets uptight about the activities of designers. Personnel hostility between representatives of the Customer and performer is no that impossible. Morbid reaction can result from successful implementation activities of one of the leaders that can spontaneously cause an authority loss of the leader who does not believe in happy end of the project. The conflict can spring up even without tangible premises for it, solely because of a misconception.

Control over development and implementation of the internal control system project is a complex problem with numerous interrelations between functional components. Quite possible are situations when implementation process participants hesitate to put the question as if over trifles, refine or clarify the situation, not understanding the idea of activities under consideration or simply do not get it at all. Therefore, it is necessary to draw up the procedure of comfortable exchange of opinions, coordination of positions and documentation of the results of discussions.

Of great importance are personnel abilities of project heads to achieve identical and coordinated positions, clear understanding by the participants of processes that proceed at project implementation.

### **Interaction at the b-test stage.**

System implementation is accompanied with the b-test stage. It is permitted to involve a limited number of workplaces, but with the coverage of all functionally related internal control and audit sections. Meeting of this condition is a must since

only then it is possible to adequately evaluate the adequacy of make project solutions and IS serviceability of the whole. It is this stage whereat defects in problem statement, omissions in detection of links between functional modules and errors in encoding are revealed. Interaction within working groups, tolerance to faults of involved personnel of the Customer, readiness for fast elimination of deficiencies on the side of the designer make the decisive factors in determination of the terms of changeover to commercial operation.

Experience in implementation of corporative IS [1] indicates that numerous problems and obstacles originating in this respect do not feature only technical character thus far. Inattention to organizational and socio-psychological problems causes frequently the delayed terms and surplus financing of works. Allowance for these factors will help form a successful strategy on IS implementation and ways for untangling the originating problems.

## CONCLUSION

Review of organizational and socio-psychological factors of IS implementation cited therein allows forming the plan of measures aimed at optimizing the IS implementation control processes.

Ass a whole, allowance for above mentioned factors matters fir implementation of whatever information system of a major concern.

Specific recommendations related to organizational and socio-psychological IS implementation control factors in general and IA internal control and audit in particular can be formulated as follows:

- control over progress of work by the organization leadership;
- direct involvement of middle managers of the departments in the implementation processes;
- communication by leadership to employees of the thesis about planning of IS functional adjustment to established schemes of the department work, not only, but a possible change of the department work procedures for application of new IS efficient functional right up to possible reengineering of control systems of the organization;
- organization of joint working groups from the Customer and Performer for discussion of the course of works and elimination of conflicts and contradictions, which should include both technical and subject specialists, and for approval of their work schedule.
- explanation of the goals and necessity of IS implementation for collective, description of advantages to be obtained and increase in efficiency at every workplace, warning about possible problems and

requiring the tolerance for possible problems of implementation and b-testing, creation of atmosphere of personnel interest in corporative interests of the organization via increase in personnel efficiency by implemented IS;

- approval of a clear order of interaction between the Customer and Performer at trial operation stage that defines the procedure of work aimed at eliminating the deficiencies from the Performer side and appropriate actions of the Customer in case information system is operated in the IS limited functional mode.

Aforementioned organizational and socio-psychological factors of the development and implementation of specialized IS have been allowed for within the general works related with working out the provisions for methodical, normative and information-technological support of budget outturn and functioning of structural branches of the Ministry of Education and Science of Russia [13-15].

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