

SELECTED PROBLEMS OF THE INFORMATION SYSTEM AUDIT

The detailed analysis of information system audit has been made in the article

Introduction

The traditional, appearing in many publications, division of audits is as follows: financial audit, operational audit, information technology audit. Also other types of audits are mentioned such as: system audit, activity audit, conformity audit. The IT audit may be treated as an independent undertaking or an auxiliary element of the operational or financial audits [3].

Audit of information systems

Within the literature on this subject-matter there is no agreement on what an audit of information systems is [1], [2]. Some authors define it as a process of gathering data on computer system actions and resources. Others are of the opinion that an audit is a survey of the existing inspection system and is used to detect illegal actions. Still according to other authors, an audit is an independent and objective assessment of factors that affect the credibility and reliability of information systems.

The information system of an enterprise comprises three types of elements:

- one or many functions, i.e. by virtue of the information system's existence,
- many means necessary or useful for the actual existence of an information system that are original in relation to its operation,
- many actions that are necessary or useful for the actual operation of an information system.

For instance, the satisfaction of needs of an accountant may be a function of the information system, a computer may be a means for the existence of such a system, whilst the development of an application software that supports the accountancy and its operation may be deemed as actions necessary for its operation.

The audit is a systematic and occurring with a planned operation frequency activity, aiming at the impartial search for objective proofs confirming the correctness

of the performance of work and actions that have been predetermined in details. Thus an informative audit may apply to one or many functions of the information system, one or many means, one or many actions of the information system. For example, the investigation tending to determine whether a concept for the information system is correct or not, i.e. whether it can meet an accounting necessity, whether a computer has been properly chosen for the realization of the system concept, whether the utility software is correct and its operation on the computer follows according to the concept, are various types of information audits.

The information system constituents may also be considered from the point of view of time. Each of the system constituents may be located in the past and/or in the present and/or in the future. The information system may be fully developed, may have existed and operated in the past and/or present time, and/or may be dedicated to the future time. The system function may have been developed in the past, the engineering means may be up-to-date, whereas the information system actions may be performed in the future, etc.

Taking into account the elements of time, the following types of information audits can be distinguished:

- corrective audit if it applies to one or many constituents of the information system, located in the past,
- detective audit if it applies to one or many constituents of the located system, located in the present (for instance, a verification if a computer operates correctly),
- preventive audit if it applies to one or many constituents of the information system, located in the future (e.g. verification if the concept of the information system being designed is correct).

The main function of the information system is the production of information intended for the management staff of the enterprise and the management of this information at the moment when they have a certain value for the users, as e.g.: enterprise, administration, tax office, etc. Each function of the information systems covers a certain set of tasks. The description of such a set of tasks, or its presentation in graphic form, constitutes a functional flow chart of the information system. For instance, a functional flow chart of the information system for stock management can comprise the following tasks:

- to collect information needed for tax statements,
- to eliminate excessive stock,
- to reduce opportunities for stock thefts.

These tasks are split into time elements, and the sets of time elements constitute time-ordered objectives. The description of those objectives is an IT plan. For instance, the IT plan of the IT system from the previous example may be made up of the following objectives:

- to replace the manual production of tax statements within a set time,
- to allow an accelerated sales of stock that might become obsolete,
- to implement a program of an effective internal inspection.

Thus the informative audit of the tasks of a given information system can refer to a functional flow chart or an IT plan, and in each case may be corrective, detective or preventive, too. It is also possible that all types of an informative audit appear simultaneously. The human factor and material means of a given information system permit the accomplishment of its tasks. These are engineering means, software and financial means.

Thus the information audit of an information system may apply to hardware and utility software, personnel, budget, and in each case it may be corrective, detective or preventive. Also, all the types of an information audit may appear at the same time.

The actions of the information system perform the tasks by the exploitation of means. The following types of actions may be distinguished among the actions of that system: conceptive actions (analysis, programming), executive actions (tests and implementations), installation and operation actions (data inputting, engineering operations, management of libraries).

Thus the information audit of the actions of a given information system may apply to general methods, programming engineering and system utilization. As previously, in each case it may be corrective, detective or preventive, or all the alternatives appear simultaneously.

Basing on the above-presented definitions as well as features of the information system, the criteria of the informative audit can be developed.

The tasks of that audit consist in assessing the constituents and respective time elements of a given information system at the moment when this assessment is useful for one owner or a group of owners who might be, but need not be, recipients of the information produced by the information system.

For instance, the audit of a stock management system may have a fiscal nature: The information system renders services to enterprises, and the information audit serves the interests represented by tax inspectors.

The auditor who has to carry out an information audit, described in the previous example, will have to define, depending upon the objective, necessary means (maybe computer time, consultations with specialists, audit budget) and actions to put into practice (methodical procedure, development of test programs, performance of tests).

Since the task of an information system consists in assessing, therefore it must be based on objective criteria.

It follows from the nature of an information audit and an information system that those criteria may not have a broader scope than the needs of the group of information system's owners, or audit results, and vice versa, these criteria may not have a narrower scope than the needs of the same group.

Rules for an information audit

As already stated, the information audit is the testing of a given information system as a whole or its part in order to issue an opinion on it. Here, the adoption of some rules may be helpful, namely:

1. Each information system has to be permanently subjected to an audit. It need not be permanent, but it may be periodical or occasional. A total lack of an audit would engender a situation in which the information system would not undergo any inspection.

2. Each information audit's mission may be incompatible with a service or a consultancy for the information system. The rule of splitting the functions between an auditor and a consultant shall be observed.

3. Each information system as such, starting with the most automated and ending with the manual system, undergoes an audit that should not omit any constituent or time element on the pretence it has not been or will not be automated.

4. Each audit is an information audit when and only when its objective is the evaluation of the whole or a part of the information system itself. The audit of any function, may not be a basis to issue, even implicitly, an opinion on the information system itself.

5. A part of the information system, which will be covered by an audit, has to be defined before the audit procedure starts.

A written contract or an order, which provides the details on the information audit, has to be drafted and approved by the parties before commencing the audit, excluding the case of an audit ordered by law. Nevertheless the auditor has to acquire a necessary minimum amount of information on the whole of the information system in order to evaluate its part that will be subjected to the audit.

6. Constituents supposed to be an object of the information audit are defined before starting the audit procedure. In the event when the definition of the audit is missing, it applies to all the constituents and time elements, and it has to formulate an opinion on each of them.

7. Time elements subject to the information audit have to be defined before the audit procedure, in the event when such precise definitions are missing, the audit applies to all time elements and constituents, and it has to formulate an opinion on each of them in corrective, detective and preventive aspects.

8. An auditor has to be competent in order to assess the information system constituents and their time elements.

Thus the auditor has to have knowledge in the area:

➤ organization and management: for the testing of organizational charts and IT plans;

➤ information technology and IT law: for the testing of hardware, software, its legality and safety;

➤ personnel problems, ergonomics, labour law: for the testing of human resources;

➤ accountancy and finances, tax law: for the testing of financial means;

➤ industrial methodology: for the testing of operational methods;

➤ software engineering: for the testing of programs' performance;

➤ IT engineering: for the testing of the operation process;

➤ contract law: for the examination of subcontracting.

9. The audit has to deliver useful conclusions, motivated in a clear and acceptable time-limit. The audit that does not clearly express up-to-date conclusions, in which the evaluation motives interfered favourably or unfavourably, or whose result is ambiguous, is not acceptable.

10. The audit may not refer, via conclusions that exceed the framework of the audit, to all constituents and elements being its object.

11. The information audit has to start with the definition of objectives as well as constituents and time elements to be tested, and aspects according to which they would be tested. Thus the audit procedure has a hierarchical structure.

12. The information audit has to follow systematically through the testing of constituents and time elements, as well as through a comparison with what they would be if the criteria for respective aspects would be applied. Thus the audit proceedings consist in comparing the existing state with a rational and sensible ideal state.

13. The information audit may refrain from formulating a precise conclusion on the subject-matter set within the audit's framework only when the related documentation is defective. The auditor may justify his/her refusal by lack of an available, clear and up-to-date documentation only when he/she, being competent in that area, would have to spend too much time to obtain the description of constituents and time elements.

14. The information audit has to be objective and independent in terms of its course and conclusions. An audit that does not minimize the cost or facilitates its tasks through the use of a questionnaire or a standard software, or does not try and influences the management staff of the enterprise so that they adopt its conclusions, or an unplanned audit and without a correct budget, may not be accepted.

Conclusion

The present-day management requires information on predetermined qualitative parameters. A continuously changing ambiance also requires from managers to keep up with changes, and this results in a necessity to improve and develop the information system. In view of this, definite requirements are set in relation to it. One of them is the need to subject the information system to a systematic, complex internal inspection and to a periodical audit. Indeed, it is not required by regulations, yet, to get the operational confidence, reliability and correctness it should be carried out at every company.

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