

# **AUDITING INTEGRATED SYSTEMS. ROMANIAN REALITIES**

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## **Abstract**

*The tone of our paper oscillates between pessimism and optimism as, although we will attempt to outline the necessity for this field of activity, we will not omit the sad state of technological growth/development in the Romanian businesses, all within the context of an accelerated/rapid technological development/growth worldwide. The added value of this paper consists in the discussions over both ERP systems implementation and their auditing.*

*In the case of the implementation of an integrated system the decision-making process is determined by the problems arising from the intra-corporate collaboration and interaction, but especially from their isolation.*

*Any implementation of an ERP solution will have a strong effect at the company level. Consequently, these implementations must be monitored and audited in order to ensure the success of such an endeavour, since they imply higher risks than in the case of accounting, payment or classical fixed assets management applications.*

*Key words: integrated systems, enterprise resource planning, information systems auditing, information risk,*

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## **1. WHY ENTERPRISE RESOURCE PLANNING?**

For the Romanian organizations which have already taken the chance of IT integration the implementation of ERP application suites means high performance, business efficiency and control. Meanwhile, the others are still hesitant as they consider integration a very difficult step to take, a hard decision and also an investment that is difficult to depreciate.

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Basically, ERP supposes a policy that reflects a business process-driven way of thinking, being thus considered a strategic management solution. The new business model, with process-oriented decisions increases productivity and meets the demands of business performance. The economic operational stages must be integrated, they must initiate activity flows, control information flows and network the organization to its suppliers and customers. All this supposes organizational changes, technological optimization and eventually a new business identity of the companies (their complete redefinition).

We are aware of the complexity that the building of an integrated information system implies at the organization level. In the case of ERP, difficulties are increased by technological problems and organizational challenges, since personalization and adaptation for specific beneficiary-oriented system configuration are necessary. In this case, figures are relevant: in an ordinary ERP, for approximately 800 – 1,000 business processes there are around 8,000 – 10,000 configuration tables. Implementation is practically based on Business Process Reengineering techniques. The process implies the analysis of important factors, such as the relationship between restructuring and the implementation of new applications which will entail radical changes in business activity. Among the most important benefits of this process we could mention:

- cost reduction by efficient resource consumption (energy, water, raw materials, manpower, time) and by avoiding penalty charges (due to late payment, violation of the terms of agreement);
- quality information and avoidance data and operations redundancy (single database);
- risk preventing and control;
- anticipation of legal requirements and the facilitation of their compliance;
- improvement of the working environment, motivation for teamwork and active participation of the staff;
- improvement of the company image and credibility on the market (by product certification);
- improvement of both intra-corporate and company-to-company communication (the collaborative dimension of the relationship with customers, partners, suppliers, authorities), decrease in reply time due to reports and ad-hoc information provided by the system;

- technological openness (system architecture allows the integration of new types of e-business applications).

## **2. THE MEANING OF ERP SYSTEMS INTEGRATION**

By means of integration, applications and data must be combined in an approach that provides more than mere access to information and to business processes.

ERP promises efficient solutions and offers the company the opportunity to implement a common interface which will allow intra-corporate information integration and data flow management. This is achieved by creating an environment in which any subsequent technological initiatives may be implemented in compliance with the remodeling of business processes or the creation of new ones.

Above all, ERP supposes planning and the choice of adequate methods and tools for shifting from isolated applications to a single platform. Information integration must be regarded as a continuous process and a long-term strategic investment, since its benefits appear only gradually. It may be considered as a form of “*life insurance*” for the information system of the company.

The approach to integration must be realistic and take into consideration two major alternatives:

- *internal integration* – focuses on the intra-corporate business processes, covered by ERP application suites;
- *external integration* – combines the services of several suppliers in order to manage extended operations, information exchange, coordination and cooperation throughout the extended value chain (expansion of the traditional ERP applications by means of “newer” Customer Relationship Management, Supply Chain Management applications).

### **3. ON THE NECESSITY OF AUDITING AN INTEGRATED SYSTEM**

ERP applications stand as the backbone of a company and they are responsible for the data, information and intra-corporate knowledge.

The ERP core application aims at managing internal data. These are collected in data warehouses from where they are extracted and analyzed by means of Decision Support Systems, using OLAP (On-Line Analytical Processing) or OLTP (On-Line Transaction Processing) tools. On the whole, data warehouses provide useful architectures and tools that are used in top management by means of systematic organization, data understanding and use in the implementation of strategic decisions. It supports chiefly information processing by providing a solid analysis platform for historical data consolidation.

From the operational point of view, integrated systems have distinct characteristics and share five essential features (Myerson, 2002: 8):

- they ensure intra-corporate technical and functional compatibility;
- the technologies that are involved in the applications and data processes are user-friendly. Integration can be achieved at any business level and with any type of technology. The key to success consists in choosing the best technology that will successfully meet the following criteria: utility for users, technological longevity, adaptability, scalability and rapidity in solution delivery;
- the applications systems, data, access to data and the graphical user interface will be harmonized and standardized for users;
- reasonableness of corporate data i.e., data have the same status in different systems and modules, they are coherently defined at the organizational level;
- all management applications and information environments are scalable, portable and cover an important number of functions. From the technological point of view, the applications can be rapidly reconfigured according to business process

changes, offering therefore flexibility. The data code and structure are fully adjustable and reproducible.

The main risks that the organization undertakes are:

- the important volume of initial investment;
- significant hidden costs;
- uncertainties related to software and future evolution of information technologies;
- increased responsibilities of staff.

#### **4. INTEGRATED SYSTEMS AUDITING**

There is no Romanian tradition of IT system development and thus no certain specific practice of their integration. Along with our discussion of the information systems auditing, we cannot but notice that until mid-2003 there was no mention of information system auditing in Romania. Domestic (Romanian) certified accountants and financial auditors should also cover this field during their accounting tasks due to the auditing standards adopted.

For most of the domestic financial audit tasks the focus is on financial statements control and not on the means through which these results were achieved. In 2003, Order no. 1077 was issued by Ministry of Finance, concerning the conditions in which the fiscal invoices with special printing, number assigning status, used in accounting and finance, shall be edited in single copy. 1077 is the first normative act which makes reference to information systems auditing even though it is limited to the third-party audit of the system security plan of a company by a CISA – Computer Information Systems Auditor. To put it differently, this is a conformity audit and not a security one!

The second (and the last one so far) is the MCTI (Ministry of Communications and Information Technology) Order no. 218/2004 regarding the procedure of advising on

remote access payment instruments, such as Internet banking, home banking or mobile-banking applications. Although this document refers to system security auditing as well, m-banking application auditing is added.

Before continuing we are bound to mention that the former normative act (1077/2003) only outlines the system security elements that must be audited while the latter (218/2004) details the structure of such a document. Consequently, this is the legal framework of information system auditing in Romania thus far.

Due to the fact that ERP has been under a misapprehension, in a significant number of Romanian implementations the control and auditing of such systems are not taken into consideration for the project calculation. This is the result of the absence of legal requirements, similar to the ones from the Sarbanes-Oxley Act<sup>1</sup> in the USA, for instance. Any implementation of an ERP solution will have a strong effect at the company level. Consequently, these implementations must be monitored and audited in order to ensure the success of such an endeavor, since they imply higher risks than in the case of accounting, payment or classical fixed assets management applications.

*Rationale:*

1. The ERP systems use data from different company departments in support of the interdepartmental management. In order to ensure company success such systems must fully integrate all the processes and procedures of the company.
2. Since January 1st, 2005, companies in the EU member states have been bound to draw up their own financial and accounting statements in conformity with IAS (International

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<sup>1</sup> A US law passed in 2002 to strengthen Corporate governance and restore investor confidence. Act was sponsored by US Senator Paul Sarbanes and US Representative Michael Oxley. The law establishes new standards for Corporate Boards and Audit Committees; establishes new accountability standards and criminal penalties for Corporate Management; establishes new independence standards for External Auditors; establishes a Public Company Accounting Oversight Board (PCAOB) under the Security and Exchange Commission (SEC) to oversee public accounting firms and issue accounting standards

Accounting Standard) provisions. Moreover, important discussions are taking place between IAS and FASB (Financial Accounting Standard Board) in order to eliminate the differences between the two standards.

3. In most of the cases, Romanian ERP implementation auditing would highlight:

- *poor project planning* – since audit and control lack from these projects, there are no people liable for such tasks;
- *lack of auditing* of the areas in which the implementation of ERP solutions affects the internal auditing of the organization;
- *the competence of professional accountants* is probably the most serious issue by far. In most of the cases, the ones involved in company auditing lack the knowledge and abilities required for the understanding of such systems. Mention should be made that auditing is exclusively computer-based;
- *insufficient familiarity* with the existing solutions and the technologies on which these solutions are based – which leads to the purchase of an application, often disregarding the real necessities of the company;
- *audit reports* are often considered mere certificates of “good behaviour”, the recommendations they contain never being put to practice.

According to the project dimensions, the following players should be involved in ERP system auditing:

- *the internal audit department* – (its existence is mandatory only in governmental organizations). In specialized literature it is mentioned that this is the department which is the most aware of the implemented system situation and the areas in which an ERP would ensure company success. The team which deals with the ERP implementation must include internal auditors;



- *external/independent auditors* – although it is not compulsory that they should be competent in every single solution, external auditors must be aware of the way in which these systems function;
- *the implementer* – must be familiar with the implemented solution and understand the business processes of the company in order to provide help with auditing planning. He / she also performs individual auditing in order to certify the solution configuration;
- *the functional departments* – each of the heads of department deals with the specific features of ERP implementing in their decision area. Since they are the beneficiaries of the system-generated statements, their involvement is necessary throughout the life cycle of the solution;
- *executive management* – the lack of real involvement of the top management is one of the main reasons for failure in ERP solutions implementation.

Since the success of the implementation depends on the modules of the integrated system, auditing takes into consideration the information system infrastructure as well:

1. *hardware equipments* – each ERP solution has its own hardware requirements that are deemed to be fundamental for the functioning of the system. Each component of this puzzle has its share in future success;

2. *network components* – ERP is entirely based on the communication network infrastructure. Here, focus is on the speed and availability of communication channels, network access and redundant channels that ensure traffic in case of unexpected events;

3. *the directories* (basic files) gather all the necessary information regarding customers, suppliers, staff, materials, finished goods etc. and interface with the application modules. Auditing must focus on data accuracy;

4. *software* – auditing focuses on the structure and functioning of the ERP package modules:

- configuration parameters: control at application level, user authorization procedure, security configurations;
- module and application security in order to ensure controlled and safe data processing;
- modification of predefined configurations, a standard measure for process integrity guarantee;
- system documentation and contextual help that provides user support;
- information security management at the organizational level and ways of risk identification and minimizing.

5. *processes* – an ERP system auditing must provide enough evidence about the integrity of the processes implied. Above all, the following aspects must be taken into special consideration:

- the identification of the auditing objectives that are specific to the implemented processes;
- identification and assessment of potential risks that are specific to the implemented processes;
- audit planning and implementation which contributes to identified risks minimizing;
- check of the functioning of implemented controls;
- check of the interfacing of the ERP modules with non-ERP applications;
- control of the business continuity plans.

6. *staff* – the structure of their roles depends on the ERP solution implemented:

- identification of the employees involved in management activities, their responsibilities and the abilities they need in order to comply with their duties;

- the demand for training courses and the way in which knowledge transfer takes place;
- the way in which job tasks are assigned and delegated.

7. *Implementation strategy.* The transition from the old system to the new ought to be achieved with the least impact on the staff. In fact, the implementation of an integrated system causes a major organizational upheaval. Information security may be affected during this transition period, this being the reason for which the most appropriate strategy must be adopted and implemented.

## 5. CONCLUSION AND FUTURE RESEARCH

All computer systems in the world must rely on human operators that have vulnerable characteristics. Every technology has an inherent risk associated. Is the management primary interest to control all aspects of their business not those financials. The fundamental purpose of management systems is to control risk of negative outcomes from processes. Integrated systems audits should have risk as their primary focus.

In the future we will design a survey that allows us to see how internal controls on integrated systems are performing against the standards. The survey will focus primarily on the four components of internal control structure:

- control environment - the foundation for all other components of internal control, providing discipline and structure.
- risk assessment - involves identifying and analyzing risks (both internal and external) relevant to achieving business objectives and objectives related to the preparation of reliable financial statements.

- information and communication - ensures that pertinent information is identified, captured, and communicated in a form and timeframe that enables people to carry out their responsibilities.
- monitoring - assessment of internal control performance over time

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