INTERNAL AUDIT IN ERP ENVIRONMENT
Greetings...!!!

Information technology is changing almost every phase of global business environment. Auditors are facing the vast challenge of working and keeping up-to-date with such sophisticated technologies. The ERP systems are one of such technologies used by various organizations to achieve a strategic advantage in the competitive market. The ERP systems are computer-based systems designed to process an organization’s transactions. It facilitates integrated and real-time planning, production, and customer response.

The objective of this paper aims is to learn about how ERP systems have affected the audit process in an organization. The emphasis is to investigate whether there are changes in audit process in an ERP implementing company. It also tries to understand how ERP system affects the internal control system of the organization. This paper also suggests that Auditors must also understand the ERP system extremely well to perform a proper audit of a client that uses this system.

Happy Reading...!!!
Nowadays, financial and operational transactions are increasing in volume and it increases complexity every day. In today’s business environment, auditors should have knowledge of both accounting and technology. The technical complexity of ERP systems has forced auditors to increase their knowledge of information technology. When a company uses an ERP system, the audit focus shifts from substantive testing of the books of account to understanding the business processes, testing the systems and applications controls, etc. At the same time, auditors must ensure that the system is automating the process correctly.

In ERP systems, operational and financial data are tied together through a complex information flow. Transactions can be automatically entered without review or pre-checking with the ERP system. For this, such controls should be designed to prevent inaccurate or false information entering in the system. So auditing must be done through the computer in ERP environments. Accountants and company management need to be aware of the risks involved with an ERP system. Today, with the implementation of integrated ERP systems, internal controls are developing to support automated operational management. As a result, finance officers have changed their approach and implementing automated internal controls that allow managers to effectively manage through ERP systems.

An ERP system automatically updates the data throughout the system once a transaction has been entered. Because the information is updated, maintained, and stored electronically, auditors need to understand how the modules interact with each other and with the database. Auditors must spend more time with lower-level employees in ERP systems to determine what they are doing while entering the data, and especially what to do if a mistake is made.
**Internal auditing** is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations. It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes. Internal auditing is a catalyst for improving an organization’s effectiveness and efficiency by providing insight and recommendations based on analyses and assessments of data and business processes. With commitment to integrity and accountability, internal auditing provides value to governing bodies and senior management as an objective source of independent advice. Professionals called internal auditors are employed by organizations to perform the internal auditing activity.

**Enterprise resource planning (ERP)** systems integrate internal and external management information across an entire organization, embracing finance/accounting, manufacturing, sales and service, customer relationship management, etc. ERP systems automate this activity with an integrated software application. Their purpose is to facilitate the flow of information between all business functions inside the boundaries of the organization and manage the connections to outside stakeholders. ERP systems can run on a variety of computer hardware and network configurations, typically employing a database as a repository for information.
The following table indicates the differences between the traditional environment and ERP Environment:

<table>
<thead>
<tr>
<th>Traditional Environment</th>
<th>ERP Environment</th>
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<tbody>
<tr>
<td>Multiple systems</td>
<td>Fewer Systems</td>
</tr>
<tr>
<td>Non integrated</td>
<td>Common integrated database</td>
</tr>
<tr>
<td>Disperse &amp; diversified</td>
<td>Integrated Business Solutions</td>
</tr>
<tr>
<td>In-house developed</td>
<td>Vendor Developed (specialist)</td>
</tr>
<tr>
<td>Batch Processing oriented</td>
<td>Strategic &amp; Decision Supporting</td>
</tr>
<tr>
<td>Closed Systems</td>
<td>Open for Collaboration</td>
</tr>
<tr>
<td>Demand for In-house IT programming skills</td>
<td>Complex and requires new set of Skills</td>
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</tbody>
</table>
The following are the characteristics of an ERP system:

- The database is usually centralized and as the applications reside on multiple users, the system allows flexibility in customization and configuration.
- The processing is real time online whereby the databases are updated simultaneously by minimal data entry operations.
- The input controls are dependent on pre data acceptance validation and rely on transaction balancing; time tested controls such as batch totals etc are often no longer relevant.
- Since the transactions are stored in a common database the different modules update entries into the database. Thus database is accessible from different modules.
- The authorization controls are enforced at the level of application and not the database; the security control evaluation is of paramount importance.
- Auditors have to spend considerable time understanding the data flow and transaction processing.
- System heavily dependent on networking on a large scale.
- Vulnerability by increased access is a price that is paid for higher integration and faster processing of data in an integrated manner.
- The risk of single point failures is higher in ERP solutions; Business Continuity and Disaster Recovery should be examined closely.
ERP systems are implemented to support the operations of an enterprise and to be successful, must be fully integrated into all the significant processes and procedures that together enable the enterprise to work effectively. Given the integrated nature of ERP systems, they can further add to the enterprise’s risks or challenges related to:

- Industry and business environment
- User or management behavior
- Business processes and procedures
- System functionality
- Application security
- Underlying infrastructure
- Data conversion and integrity
- Ongoing maintenance/business continuity

The risks associated with the implementation and ongoing use of an ERP system cannot be determined or controlled by review of application or technical risks in isolation, but must be considered in conjunction with the business process control objectives of the enterprise being served. The challenge to the audit professional is, obtaining an understanding of the business and regulatory environment in which the enterprise operates and being skilled in the identification of quantifiable application or technical risks and less quantifiable procedural or behavioral risks.

Typically, in a large enterprise where the quantity of data processed by the ERP system is extremely voluminous, the analysis of patterns and trends proves to be extremely useful in ascertaining the efficiency and effectiveness of operations. Most ERP systems provide opportunities including specific tools for such extraction and analysis. The use of data analysis tools within the ERP system can assist the audit professional throughout the ERP system’s life cycle (i.e., pre- and post implementation).
Lack of transaction trails

Some ERP systems are designed so that a complete transaction trail that is useful for audit purposes might exist for only a short period of time or only in computer readable form. Where a complex application system performs a large number of processing steps, there may not be a complete trail. Accordingly, errors embedded in an application’s program logic may be difficult to detect on a timely basis by manual procedures.

Uniform processing of transactions

Computer processing uniformly processes like transactions with the same processing instructions. Thus, the clerical errors ordinarily associated with manual processing are virtually eliminated. Conversely, programming errors (or other systematic errors in hardware or software) ordinarily result in all transactions being processed incorrectly.

Lack of segregation of functions

Many control procedures that would ordinarily be performed by separate individuals in manual systems may be concentrated in ERP. Thus, an individual who has access to computer program, processing or data may be in a position to perform incompatible functions.

Initiation or execution of transactions

ERP may include the capability to initiate or cause the execution of certain types of transactions automatically. The authorization of these transactions or procedures may not be documented in the same way as those in a manual system, and management’s authorization of these transactions may be implicit in its acceptance of the design of the ERP and subsequent modification.
Potential for errors and irregularities

The potential for human error in the development, maintenance and execution of ERP may be greater than in manual systems, partially because of the level of detail inherent in these activities. Also, the potential for individuals to gain unauthorized access to data or to alter data without visible evidence may be greater in ERP than in manual systems. In addition, decreased human involvement in handling transactions processed by ERP can reduce the potential for observing errors and irregularities. Errors or irregularities occurring during the design or modification of application program or systems software can remain undetected for long periods of time.

Dependence of other controls over ERP

ERP may produce reports and other output that are used in performing manual control procedures. The effectiveness of these manual control procedures can be dependent on the effectiveness of controls over the completeness and accuracy of computer processing. In turn, the effectiveness and consistent operation of transaction processing controls in computer applications is often dependent on the effectiveness of general ERP controls.

Management supervision

ERP can offer management a variety of analytical tools that may be used to review and supervise the operations of the entity. The availability of these additional controls, if used, may serve to enhance the entire internal control structure.

Computer-assisted audit techniques

The case of processing and analyzing large quantities of data using ERP may provide the auditors with opportunities to apply general or specialized computer audit techniques and tools in the execution of audit tests.
**Business process re-engineering.** (BPR) is the analysis and design of workflows and processes within an organization. A business process is a set of logically related tasks performed to achieve a defined business outcome. Re-engineering is the basis for many recent developments in management. The cross-functional team, for example, has become popular because of the desire to re-engineer separate functional tasks into complete cross-functional processes. Also, many recent management information systems developments aim to integrate a wide number of business functions. Enterprise resource planning, supply chain management, knowledge management systems, groupware and collaborative systems, Human Resource Management Systems and customer relationship management.

BPR and ERP implementation projects can be thought of as being independent initiatives. In theory, each project could exist within an enterprise without the other. In practice, they are often both in process at the same time in an enterprise and are influenced by and dependent on each other in a myriad of complex relationships, often including common design for key business processes. An ERP might be selected to replace an existing system, and the execution of a BPR may be delayed. A BPR might be in place but terminated prior to completion, and an included ERP implementation might continue.

BPR and ERP implementations are often at different stages of their development. A BPR project may be started and several months into the project when it is concluded that an ERP is required to support the new processes, an acquisition project commences. Similarly, a business decision might have been made to acquire a new IT system and choose an ERP system. During the implementation process it may be recognized that the ERP would enable a business reengineering and a BPR initiative’s commencement.

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The Auditor’s primary focus should be with an ERP implementation. However, concurrent BPR may introduce new risks to the implementation process and often change existing risks, e.g.:

- The changes proposed by BPR may require the people affected to behave in a different manner and may engender support, concern and/or even hostility within an enterprise. This may be transferred to the ERP implementation project.
- BPR may drain enterprise resources from the ERP implementation.
- Even if the above two risks have no effect on the ERP implementation, unfamiliarity with new processes introduced by BPR might lead to inadequate process description and suboptimal configuration of the ERP system.
- BPR and ERP may not be well integrated, leaving, at best, suboptimal performance and unnecessary expenses.
- Using ERP as a ‘change lever’ may distract from BPR. With new, more powerful technology there is a temptation to adopt a process simply because the new technology can do it, rather than because it is the optimum business process.
Audit Parameters

ERP systems have many parameters such as process parameters, operational parameters, control parameters, financial integration parameters, cost-sharing parameters and so on. These parameters not only affect the effectiveness of internal controls, but also affect the accuracy and consistency of financial data. In particular, during the integration of financial data with control data, the correctness of the data source, parameter’s settings and financial data’s validity should be ensured.

Data Security audit

Computers and network technology enables the widest range of accounting information being shared among the information users, but this is based on a common access to data security. As the computer technology and human impact will increase the risk of network information, especially in ERP environment, data is used in electronic mode which has no traces of modification and forgery. So the reliability of available audit information decreases and also its authenticity is threatened. Therefore, auditors must actively carry out data security audits as an important aspect of internal audit in response to ERP environment.

Audit Software

Manual auditing practices are difficult to adapt to the needs of electronic accounting data. Construction of the internal audit information should be simultaneous development of information systems, accounting and auditing techniques. Therefore, the current need is to sync the information technology with the audit requirements by developing a audit software which has intelligent, integrated, network versatility and practicality features. The ideal audit software should have financial analysis capabilities, testing functions, the calculation processing functions, auditing functions, statements and notes merge function, automatically generate audit papers function, instant help function, and network access capabilities. In addition, the audit software audit should also provide audit plans, audit summary, information like the list of commonly used instruments, templates and regulations.
The internal audit function can help identify, review, and provide recommendations for key controls associated with the project and can provide assurance that the ERP system will support business processes and enforce business controls on an ongoing basis. The use of collaborative internal auditors on all critical phases of an ERP project is the best approach to increasing the likelihood of a successful ERP deployment.

Throughout an ERP implementation, internal audit can help identify and communicate risks by having them addressed throughout the project instead of as an afterthought. By understanding the major phases and objectives of an ERP implementation, internal audit can objectively raise issues that, if overlooked, could jeopardize a project’s success. Internal auditors can also articulate the risks from a management perspective.

Success for ERP implementations, like all projects, is not determined solely by whether the project was completed on time and on budget. The quality of the final product and its alignment with management’s desired objectives have long-lasting impact beyond the initial project costs. Fixing errors after the system goes live is more costly than correctly implementing the system in the first place. Throughout the implementation, internal audit should have a vital role in verifying that project controls and best practices are followed. This role greatly reduces the risk of failure resulting from poorly defined methodologies or weak enforcement of project controls.
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