



BANGLADESH
COST ACCOUNTING
STANDARDS
BCAS - 22

Enterprise Resource
Planning

BACS 22: Enterprise Resource Planning

22.1 Introduction

An Enterprise Resource Planning (ERP) is a complex set of computer applications designed to integrate the processes and functions within the same company. This system is able to present a holistic vision of the company's business by sharing a common and integrated database. With the advent of information technology and its business application, the pattern of business decision making has been changed significantly. Many companies greatly rely on computers and software to provide accurate information to effectively manage their business. It is becoming increasingly necessary for all businesses to incorporate information technology solutions to operate successfully. One way that many corporations have adopted information technology on a large scale is by installing ERP systems to accomplish their business transaction and data processing needs. Making accurate decision as fast as possible becomes the cheat code of success for today's business. Tougher competition in the marketplace is generating the need to better optimize resources, improve profitability and keep customers satisfied. Due to these reasons, companies are increasingly implementing ERP software solutions to improve operations and provide faster customer response. ERP systems arrived on the accounting scene with much fanfare in 1990s. These systems, which are essentially vendor defined enterprise wide accounting systems, promised fully integrated applications built upon common, centrally defined databases. This standard presents important issues relating to ERP systems for companies who are planning to implement such system.

22.2 Objectives

The standard provides a basic guideline for implementing ERP system in an organization with a view to increasing fast and accurate decision making capability to remain competitive in an information era. More specifically, the standard explicitly addresses -

- a) The usefulness of ERP system;
- b) The reasons for failure of ERP system;
- c) The step by step process of implementing ERP system; and
- d) The cost, maintenance, methods and team responsible for ERP system.

22.3 Scope

22.3.1 This standard provides guidelines for implementing ERP system in organizations.

22.3.2 This standard is applicable to measure, evaluate, follow up and control the ERP system implemented by organizations.

22.3.3 This standard may be followed by companies and other business or non-business organizations where cost and management accounting is in practice either as a statutory obligation or to support management decision making process.

22.4 Key Features

The key features of this standard are pointed below -

- a) Presenting the process of implementing ERP system;
- b) Identifying the potential risks of ERP system;
- c) Listing the functions supported by ERP package; and
- d) Briefing the taxonomy of critical factors of ERP system.

22.5 Definitions

The following terms are used in this standard with the meanings specified -

- 22.5.1 Business intelligence: Business intelligence is a computer-based technique to help with decision making by analyzing data.
- 22.5.2 Business process: Business process is a logically related activity or group of activities that takes input, processes it to increase value, and provides output.
- 22.5.3 Business process integration: Business process integration is the assimilation of business processes together in a central system.
- 22.5.4 Cloud computing: Cloud computing is having a third party host the software and systems a business needs as a service through the use of the Internet.
- 22.5.5 Disaster Recovery: When the same data is stored in multiple separate locations, disaster recovery plan helps to recover in case of failure.
- 22.5.6 Data repository: Data repository is a location to store data.
- 22.5.7 Information system: Information system refers to interaction between information technology, business processes, and data for decision making.
- 22.5.8 Information technology: Information technology in the broadest sense refers to both the hardware and software used to store, retrieve, and manipulate information using computer systems and applications.
- 22.5.9 Key performance indicators: Key performance indicators, known as KPI, provide baseline metrics that companies use to measure how well the system and processes are performing.
- 22.5.10 Legacy system: Legacy system is when a new system is identified for replacement; the older system is referred to as the legacy.
- 22.5.11 Life cycle: Lifecycle refers to the structure from which software applications such as ERP evolves and is integrated within business processes.

22.6 Standards

- 22.6.1 Enterprise Resource Planning (ERP) systems are software packages that use relational database technology to integrate various units of an organization's information system. It ensures business process integration.
- 22.6.2 ERP systems provide several separate, but integrated modules, which can be installed as a package for any organization. Many large corporations use several different and separate information systems, often because they have merged with and/or acquired other companies with varied systems. In most of the cases, it supports business intelligence.
- 22.6.3 Choosing an ERP solution that meets specific business requirements will enable one to have a smoother implementation. It should be aligned with particular business processes.

- 22.6.4 ERP systems bring multiple benefits to implementing organization. Some of such benefits could be listed as below:
- a) Improved security and availability
 - b) Increase in organizational flexibility
 - c) Cost reduction
 - d) Fast amortization of investment
 - e) More efficient business processes
 - f) Higher quality of business processes
 - g) Improved integrability
 - h) Reduced complexity and better harmonization of IT infrastructure
 - i) Better information transparency and quality
 - j) Better and faster compliance with legal requirements and Frameworks
- 22.6.5 One of the top reasons why ERP implementations fail is because the software doesn't meet basic industry specific business requirements. However, purchasing an ERP application is only half the battle. A well designed implementation plan is the key to success. Continuous monitoring of key performance indications is important to appraise the relevance of the system. In addition, poor or non-existent analysis prior to quoting, insufficient or poor training , lack of industry specific knowledge, incoming data inaccuracy (Garbage In Garbage Out) & taking too big a bite all at once may cause failure.
- 22.6.6 The excellent ability of ERP systems to simplify business transaction processing, eliminate work that adds little or no value, and simultaneously improve customer service are the main reasons for the outstanding success and popularity of these systems. It eliminates data redundancy.
- 22.6.7 ERP systems have made legacy systems outdated and obsolete for many companies. For example, by implementing an ERP system, Owens Corning went from having over 200 legacy systems to fewer than ten.
- 22.6.8 The main obstacle to installing an ERP system is the cost. However, an ERP system can provide significant benefits by improving information processing quality and thus management decisions related to business operations.
- 22.6.9 The significant costs of acquiring and successfully implementing an ERP system indicate that it should be considered as a long-term investment, with careful planning to obtain all the available benefits of improved data processing.
- 22.6.10 The mistake many companies make when initially trying to estimate the cost of an ERP project is only paying attention to the actual software license costs. In reality, there are four elements to consider in budget.
- a) Software License Fees
 - b) Maintenance Fees
 - c) Hardware
 - d) Implementation Services
 - e) Integration Cost
 - f) Compliance and validation cost
- 22.6.11 The five key items to consider when selecting an ERP system are functionality, price, hardware platforms, the RDBMS (relational data base management system), and the installed base.

- 22.6.12 Functionality deals with the availability and ease of installation of new modules and updated applications. As discussed previously, the costs to initially purchase and install an ERP system are substantial. Different ERP system prescribes hardware for running the system smoothly. The RDBMS of the ERP system primarily deals with the programming language upon which the system operates. Installed base is an important factor in selecting an ERP system because the system must be efficiently implemented and the significant costs of the system must be recovered through improved and more efficient operations.
- 22.6.13 Large-scale, complicated ERP systems can often take twelve to eighteen months to be installed and operating. Any needed costs for consultants to modify or customize the system are extremely high. Installation takes between 1 and 3 years (21 months on average), with benefits starting to accrue in an average of 31 months.
- 22.6.14 After the system is installed, upgrades will be necessary within a few years in order to maintain current information technology capabilities. However, very frequent upgrades to the ERP system can be as expensive as the original implementation.
- 22.6.15 Accountants and company management need to be aware of the risks involved with an ERP system. A very common problem encountered during implementation of the ERP system is eliminating traditional controls without replacing them with new effective control measures.
- 22.6.16 The ERP implementation creates cross-module integration, data standardization, and industry best practices, which are all combined into a timeline involving a large number of resources. The business process "as-is" state and information flows between various business operations are examined for scope of the implementation. The "as-is" process model is developed by examining the layers of the "as-is" process, and focuses on the most important or major areas of concern.
- 22.6.17 An example of an "as-is" process would be how to pay a vendor invoice. A company typically issues a purchase order for goods or services to a vendor. A copy of the purchase order is sent to the accounts payable department and the vendor. Once the items or services are completed, the vendor submits an invoice electronically (email or EDI), or possibly by postal mail, to the company for payment. The accounts payable department matches the purchase order against the invoice, the receiving document (if items received), and the invoice. If they match, the accounts payable department issues payment.
- 22.6.18 The "to-be" design and mapping of legacy business processes are developed according to the company's business model. The "to-be" design will generally include company operating business rules, data conversion, reporting, and organizational hierarchy requirements.
- 22.6.19 Generally, the process examines the "to-be" model as the ideal workflow without constraint, along with considerations for future growth and IT investments. The vendor payment "to-be" process, for example. The purchase order is entered into the ERP system common database. A copy of the purchase order is electronically sent to both the vendor and the company accounts payable department. When goods are received or services are performed, a confirmation transaction takes place to alert of completion. Matching is done and a check is prepared and automatically sent to the vendor in the ERP system. The automated process enables accuracy of information, and eliminates redundancy of data and potential delay of payment.

22.6.20 For successful implementation of ERP system, it is important to proceed with the following five steps one after another.

- a) Strategic planning
- b) Procedure review
- c) Data collection and clean-up
- d) Training and testing
- e) Go live and evaluation

22.6.21 **Strategic planning stage deals with activities like assignment of a project team, examining current business processes and information flow, setting objectives, and finally developing a project plan.**

22.6.22 Assign a project team with employees from sales, customer service, accounting, purchasing, operations and senior management. Each team member should be committed to the success of the project and accountable for specific tasks, i.e. developing a timeline, finalizing objectives, formulating a training plan. Base the selection on the knowledge of the team not status of the employee.

22.6.23 Have the team perform an analysis on which business processes should be improved. Gather copies of key documents such as invoices, batch tickets and bill of lading for the analysis. The team members should also conduct interviews with key personnel to uncover additional areas of improvement needed.

22.6.24 The objectives should be clearly defined prior to implementing the ERP solution. ERP systems are massive and it is not possible to implement every function. The team needs to define the scope of implementation.

22.6.25 The team should develop a project plan which includes previously defined goals and objectives, timelines, training procedures, as well as individual team responsibilities. The end result of the project plan should be a "to do" list for each project team member.

22.6.26 **Procedure review stage is very important where software capabilities are reviewed, manual processes are identified and standard operating procedures (SOP) are developed.**

22.6.27 Dedicate 3-5 days of intensive review of the software capabilities for the project team. Train on every aspect of the ERP software to fully educate the team on capabilities and identify gaps. Determine whether modifications are needed prior to employee training.

22.6.28 Evaluate which processes that are manual and should be automated with the ERP system.

22.6.29 Develop standard operating procedures (SOPs) for every aspect of business. These procedures should be documented. Make sure that to modify the document as SOPs change.

22.6.30 **Data collection and clean up stage deals with conversion of data, collection of new data, reviewing all data input and cleaning data.**

22.6.31 Determine which information should be converted through an analysis of current data. One can't assume 100% of the data can be converted as there may be outdated information in the system.

- 22.6.32 Define the new data that needs to be collected. Identify the source documents of the data. Create spreadsheets to collect and segment the data into logical tables.
- 22.6.33 After the converted and manually collected data is entered into the ERP database, then it must be reviewed for accuracy and completeness. Data drives the business, so it is very important that the data is accurate.
- 22.6.34 Review and weed out unneeded information such as customers who haven't purchased in a while or are no longer in business. Now is the time for improving data accuracy and re-establishing contact with inactive customers.
- 22.6.35 **Training and testing stage covers pre-testing of database, verify testing, training the trainer and performing final testing.**
- 22.6.36 The project team should practice in the test database to confirm that all information is accurate and working correctly. Use a full week of real transaction data to push through the system to validate output. Run real life scenarios to test for data accuracy.
- 22.6.37 Make sure the actual test mirrors the Standard Operating Procedures outlined in step 2, and determine whether modifications need to make.
- 22.6.38 It is less costly and very effective if one train the trainer. Assign project team members to run the in-house training. Set up user workstations for at least 2 days of training by functional area. Provide additional tools, such as cheat sheets and training documentation. Refresher training should also be provided as needed on an ongoing basis.
- 22.6.39 The project team needs to perform a final test on the data and processes once training is complete and make any needed adjustments. It is not required to run parallel systems, if a thorough testing has been completed.
- 22.6.40 **In final stage, ERP goes live which requires a final checklist and end up with evaluation of the solution.**
- 22.6.41 Final Go Live Countdown Checklist includes the following point along with some others based on the typical nature of ERP:
- a) Physical inventory process is complete.
 - b) Beginning balance entry procedures are developed for all modules.
 - c) Any transition issues are addressed.
 - d) Documents & modifications are tested thoroughly.
 - e) Executives and departments heads are fully trained.
 - f) Vendor is available for go-live day.
 - g) Users will have assistance during their first live transactions.
- 22.6.42 Develop a structured evaluation plan which ties back to the goals and objectives that were set in the planning stage.
- 22.6.43 **In addition, a post-implementation audit should be performed after the system has been up and running for the first week for reconciliation purposes and three to six months following to test whether or not the anticipated return on investment (ROI) and business benefits are being realized. Comparing actual numbers with previously established benchmarks will reveal if the software tool does what it is intended to do - add value to the business. It is important to periodically review the system's performance to maximize ROI.**

22.7 Recording and Reporting

- 22.7.1 Decision of implementation of ERP is a top management exercise which is very important and thus requires a proper authorization process.
- 22.7.2 Cost profile of ERP should be in a form that can be properly accounted for by the respective departments. It should indicate onetime costs, repetitive costs, cost for review and update etc.
- 22.7.3 Life cycle of implemented ERP should be done with the identification of risk profile at every stage so that it can be properly managed.
- 22.7.4 ERP team should work based on a wisely designed terms of reference (ToR) to reduce any potential conflicts in future and also to implement the ERP smoothly.
- 22.7.5 Post-implementation audit should come up with the potential area for improvements, if any, and there should be a mechanism of communication of the same within the organization.
- 22.7.6 Organization should have the following written guidelines to resolve any potential confliction in advance and to encourage smooth transition to new system from legacy system:
- a) ERP team members with their key roles, authorities and responsibilities;
 - b) Cost, time and other resource requirements;
 - c) Training policy to handle change management crisis;
 - d) ERP implementation steps and checklist for final implementation;
 - e) Standard operating procedures;
 - f) Conflict resolution guidelines;
 - g) Performance evaluation measures, e.g., key performance indicators; and
 - h) Any other guidelines if required in certain circumstances.

22.8 Effective Date

This standard will be effective from January 1, 2017 onwards.

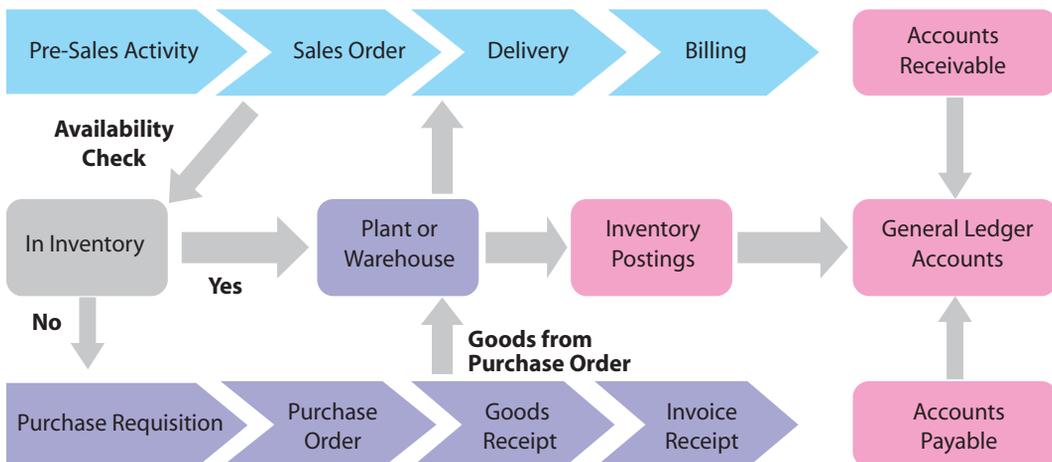
Appendix 22A

Risk from ERP System

Operation Risks	Financial Risks	Technological Risks	Miscellaneous Risks
a. Product Risk (competition and change in consumer preferences)	a. Price (interest rate, currency, stock price, commodity, etc.)	a. Security (physical and logical)	a. Political
b. Customer Relationship (order taking, order fulfillment, satisfaction)	b. Liquidity	b. Integrity of data and programs	b. Legal
c. Production (interruption, cycle time, health and safety)	c. Credit	c. Network and hardware availability (system failure, backup, capacity and salability, access, etc.)	c. International
d. Procurement and Sourcing		d. System Support	d. Environmental
e. Human Resources (e.g., personnel, payroll, benefits)		e. Personnel issues (turnover, expertise, training, outsourcing support)	e. Regulatory other than environmental
f. User Training		f. System interface with other systems	f. Fraud
g. Quality Assurance		g. Maintenance (Modification, upgrade, and migration) of systems	g. Financial reporting errors or disclosures
			h. Privacy violation (employee, customer, or supplier)

Appendix 22B

Example of Integrated Decision Making in ERP



Appendix 22C

List of Functions Supported by an ERP Package

Financials	Human resources	Operations and Logistics	Sales and Marketing
Accounts Receivable and Payable	Human-resource time accounting	Inventory management	Order management
Asset Accounting	Payroll	Materials management	Pricing
Cash management and forecasting	Personnel planning	Plant maintenance	Sales management
Cost-element and cost-center accounting	Travel expenses	Production planning	Sales planning
Executive information system		Project management	
Financial consolidation		Purchasing	
General ledger		Quality management	
Product-cost accounting		Routing management	
Profitability analysis		Shipping	
Profit-center accounting		Vendor evaluation	
Standard and period related costing			

Appendix 22D

Critical Success Factors of ERP System

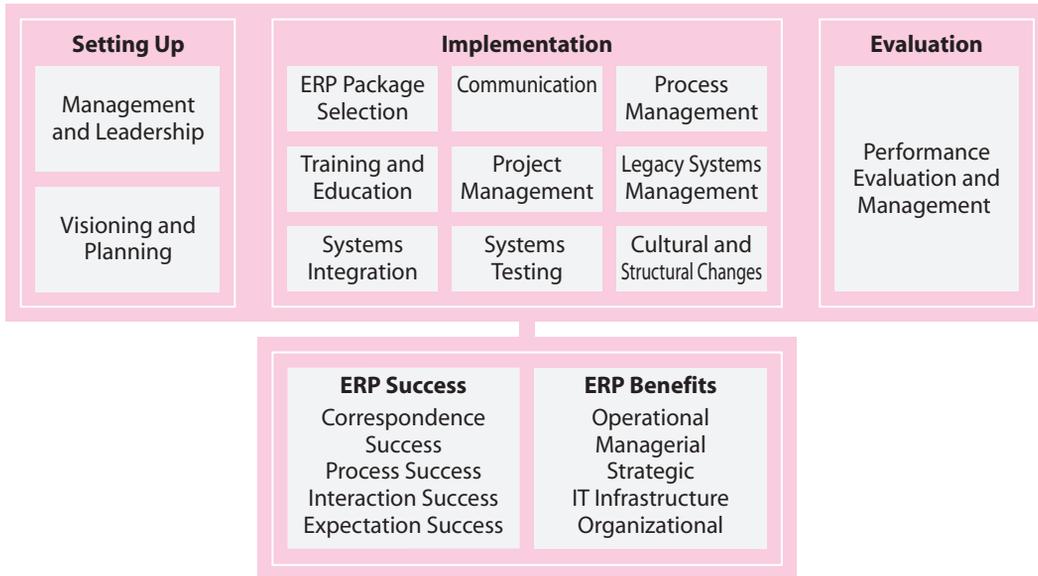


Figure: Taxonomy for ERP critical success factors