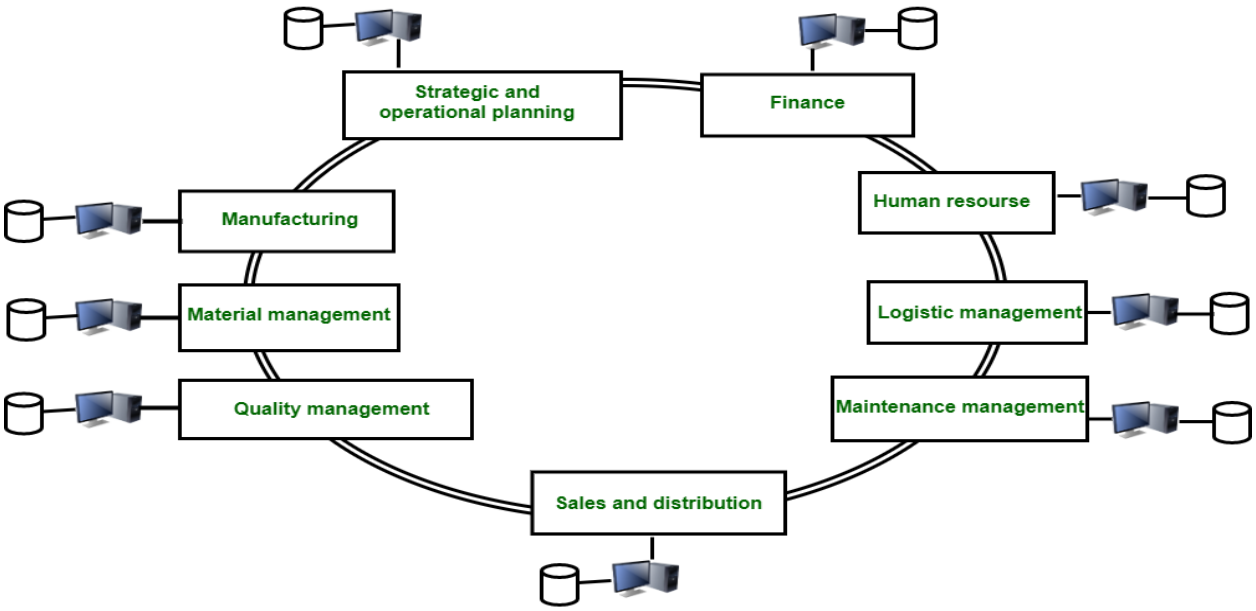
MANAGEMENT INFORMATION SYSTEM
MODULE 4
ENTERPRISE MANAGEMENT SYSTEM

INTRODUCTION

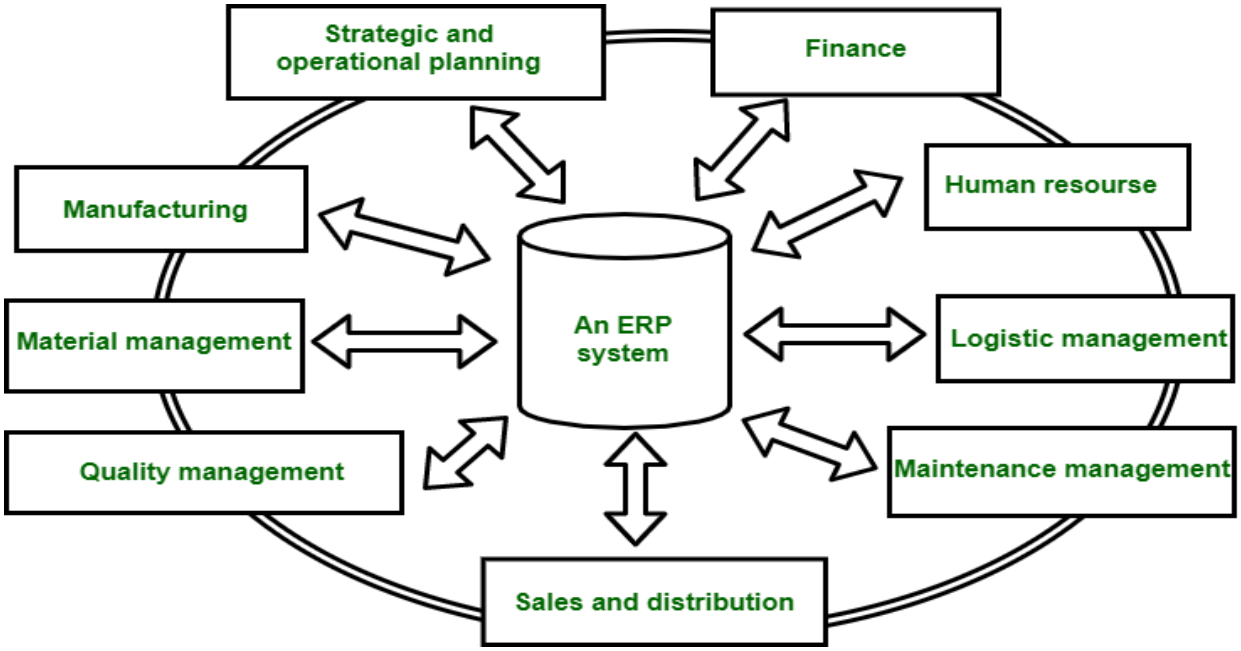
Enterprise resource planning (ERP) is the integrated management of main business processes, often in real time and mediated by software and technology.

ERP is usually referred to as a category of business management software—typically a suite of integrated applications—that an organization can use to collect, store, manage, and interpret data from many business activities.ERP systems are the kind of software tools which are used to manage the data of an enterprise. ERP system helps different organizations to deal with different departments of an enterprise. Different departments like receiving, inventory management, and customer order management, production planning, shipping, accounting, human resource management, and other business functions.

Basically, it is the practice of consolidating an enterprise's planning, its manufacturing, its sales and marketing efforts into one management system. It combines all databases across different departments into a single database which can be easily accessible to all employees of that enterprise. It helps in automation of the tasks involved in performing a business process.



Before an ERP system, there are different databases of different departments which they managed by their own. The employees of one department do not know about anything about other department.



After ERP system, databases of different departments are managed by one system called ERP system. It keeps tracks of the entire database within system. In this

scenario, employee of one department has information regarding the other departments.

ERP SYSTEM

Enterprise resource planning (ERP) systems are complete, integrated systems that manage all aspects of a production-based or distribution business, aligning financial management, human resources, supply chain management, and manufacturing or distribution with the core function of accounting. ERP systems provide cohesiveness from the beginning to end of all business processes

ERP systems typically include the following characteristics:

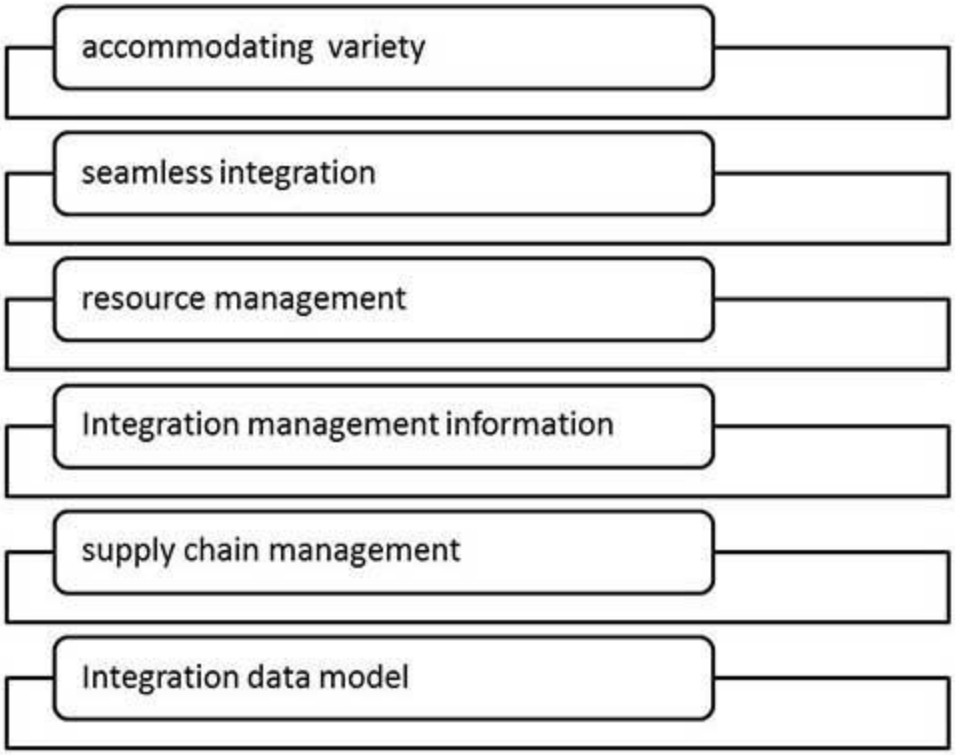
- An integrated system
- Operates in (or near) real time
- A common database that supports all the applications
- A consistent look and feel across modules
- Installation of the system with elaborate application/data integration by the Information Technology (IT) department, provided the implementation is not done in small steps

Scope of ERP

- Finance − Financial accounting, Managerial accounting, treasury management, asset management, budget control, costing, and enterprise control.
- Logistics − Production planning, material management, plant maintenance, project management, events management, etc.
- Human resource − Personnel management, training and development, etc.
- Supply Chain − Inventory control, purchase and order control, supplier scheduling, planning, etc.
- Work flow − Integrate the entire organization with the flexible assignment of tasks and responsibility to locations, position, jobs, etc.

Features of ERP

The following diagram illustrates the features of ERP –



OVERVIEW AND BENEFITS OF ERP:

(a) Business integration: The first and the most important advantage lie in the promotion of integration. The reason ERP packages are called integrated is the automatic data up gradation between related business components, since conventional company information systems were aimed at the optimization of independent business functions in business units, almost all were weak in terms of the communication and integration of information that transcended the different business functions in the case of large companies in particular, the timing of system structure and directives differs from each product and department / functions and sometimes they are disconnected. For this reason, it has become an obstacle in the shift to new product and business classification. In the case of ERP packages the data of related business functions is also automatically updated at the time a transaction occurs. For this reason, one is able to grasp business details in real time, and carry out various types of management decisions in a timely manner based o that information.

(b) Flexibility: The second advantage of ERP packages is their flexibility. Diverse multi functional environments such as language, currency, accounting standards and so on are covered in one system and functions that comprehensively managed

multiple locations that span a company are packaged and can be implemented automatically. To cope with company globalization and system unification, this flexibility is essential, and one could say that it has major advantages, not simply for development and maintenance, but also in terms of management.

(c) Better analysis and planning capabilities: Yet another advantage is the boosting of planning type functions. By enabling the comprehensive and unified management of related business and its data, it becomes possible to fully utilize many types of decision support systems and stimulation systems. Furthermore, since it becomes possible to carry out flexibility and in real time the feeling and analysis of data from a variety of dimensions, one is able to give decision makers the information they want, thus enabling them to make better and informed decisions.

(d) Use of latest technology: The fourth advantage is the utilization of latest developments in information technology (IT). The ERP vendors were very quick to realize that in order to grow and to sustain that growth: they have to embrace the latest developments in the field of information technology. So they quickly adopted their systems to take advantages of the latest technologies like open systems, client server technology, internet/ intranet, computer aided acquisition and logistics support, electronic commerce etc. It is this quick adaptation to the latest changes in information technology that makes the flexible adaptation to changes to future business environments possible. It is this flexibility that makes the incorporation of the latest technology possible during the system customization, maintenance and expansion phases.

(e) Reduced inventory and inventory carrying cost: The manufacturing nature of many ERP users makes the issue of process and material costs savings paramount. The main factor behind these savings is that implementation of the ERP system allows customers to obtain information on cost, revenues and margins, which allow it to better, manage its overall material cost structure. This ability to manage costs is best seen in savings that organizations can obtain in their inventory systems. Customers can perform a more complete inventory planning and status checking with the ERP system. These checks and plans reveal existing surpluses or shortages in supplies. Improved planning and scheduling practices typically lead to inventory reductions to the order of 20 per cent or better. This provides not only a one time reduction in assets (cost of the material stocked), but also provides ongoing savings of the inventory carrying costs. The cost of carrying inventory

includes not only interest but also the costs of warehousing, handling, obsolescence, insurance, taxes, damage and shrinkage.

(f) Reduced manpower cost: Improved manufacturing practices lead to fever shortages and interruptions and to less rework and overtime. Typical labor savings from a successful ERP system are a 10 per cent reduction in direct and indirect labor costs. By minimizing rush jobs and parts shortages, less time is needed for expediting, material handling, extra setups, disruptions and tracking splits lots odd jobs that have been set aside. Production supervisors have better visibility of required work and can adjust capacity or loads to meet schedules. Supervisors have more time for managing, directing and training people. Production personnel have more time to develop better methods and improve quality.

(g) Reduced material costs: Improves procurement practices lead to better vendor negotiations for prices, typically resulting in cost reductions of 5 per cent or better. Valid schedules permit purchasing people to focus on vendor negotiations and quality improvements rather than spending their time on shortages and getting material at premium prices. ERP systems provide negotiation information, such as projected material requirements by commodity group and vendor performance statistics. Giving suppliers better visibility of future requirements help them achieve efficiencies that can be passed on as lower material costs.

(h) Improves sales and customer service: Improved coordination of sales and production leads to better customer service and increased sales. Improvements in managing customer contacts, making and meeting delivery promises, and shorter order to ship lead times, lead to higher customer satisfaction, goodwill and repeat orders. Sales people can focus on selling instead of verifying or apologizing for late deliveries. In custom product environment, configurations can be quickly identified and prices, often by sales personnel or even the customer rather than the technical staff. Taken together, these improvements in customer service can lead to fewer lost sales and actual increase in sales, typically 10 per cent or more. ERP systems also provide the ability to react to changes in demand and to diagnose delivery problems. Corrective actions can be taken early such as determining shipment priorities, notifying customers of changes to promise delivery dates, or altering production schedules to satisfy demand.

(i) Efficient financial management: Improves collection procedures can reduce the number of days of outstanding receivables, thereby providing additional available cash. Underlying these improvements is fast, accurate invoice creation directly from shipment transactions, timely customer statements and follows

through on delinquent accounts. Credit checking during order entry and improved handling of customer inquires further reduces the number of problem accounts. Improved credit management and receivable practices typically reduce the days of outstanding receivables by 18 per cent or better. Trade credit can also be maximized by taking advantage by supplier discounts and cash planning, and paying only those invoices with matching recipients. This can lead to lower requirements for cash-on hands.

The benefits from ERP come in three different forms i.e. in the short-term, medium-term and long-term. When initially implemented, in a year of the organization going live with ERP, it helps in streamlining the operational areas such as purchase, production, inventory control, finance and accounts, maintenance, quality control, sales and distribution, etc. This benefit is in form of 'automating' the transactions which promises accuracy, reliability, availability and consistency of data.

MODELS OF BUSINESS FUNCTION INTEGRATION

Business integration is a strategy whose goal is to synchronize information technology (IT) and business cultures and objectives and align technology with business strategy and goals. Business integration is a reflection of how IT is being absorbed as a function of business. Business integration refers to all the linkages that exist between various activities and processes of a company in such a way that value is added. In a nutshell, business integration models are those management accounting tools that enables business managers to link various activities and processes of an organization for maximum productivity

Enterprise integration leads to;

- More agile enterprise
- Elimination of redundant or non value added activities
- More efficient system after being enabled by IT
- Streamlining of five flows in the enterprise:
  a) Information b) Material c) Money d) Control and e) Intangibles such as customer satisfaction and quality improvement
- Empowerment of employees to take action

Based on Hansen (1991), there are five reasons of building the employees motivation due to integration

1. When people understand the vision or larger task of an enterprise and are given the right information, resources and responsibilities, they will do the right thing.
2. Group of empowered people with good leadership will effectively participate in the decision making process.
3. The existence of comprehensive and effective communications network leads to distribution of knowledge and information.
4. The democratization and dissemination of information throughout the network in all directions, irrespective of organizational position, ensures the true integration of the enterprise.
5. Information freely shared with empowered people, who are motivated to make decisions, will naturally distribute the decision making process throughout the entire organization.

ERP MODELS AND MODULES

Enterprise resource planning (ERP) systems have become a critical tool for businesses over the past several decades. An ERP solution automates critical business processes and serves as a shared database for all financial and operational information from across the company. It pulls this data from a number of modules built to help various departments, from accounting to supply chain to human resources, perform their individual functions.

An ERP solution gives all employees access to the information they need to answer important questions about their department's current performance and future planning, as well as target areas for improvement. This single source of information minimizes data accuracy and consistency issues and ensures everyone is looking at the same numbers, no matter their role. It also drives better decision-making that leads to more efficient processes and cost savings. Additionally, ERP can automate many tasks, reducing errors and freeing up employees to focus on more strategic work.

Common ERP modules support back- and front-office functions like finance and accounting, procurement, manufacturing, inventory management, order management, warehouse management, supply chain management, customer relationship management (CRM) procurement and workforce management. More

functionally-rich solutions may also include professional services automation (service resource management), human resources management, ecommerce and marketing automation

Functional Modules of ERP Software

ERP software is made up of many software modules. Each ERP software module mimics a major functional area of an organization. Common ERP modules include modules for product planning, parts and material purchasing, inventory control, product distribution, order tracking, finance, accounting, marketing, and HR. Organizations often selectively implement the ERP modules that are both economically and technically feasible. However, it is not necessary that every enterprise system application will have all modules mentioned above. Some organizations intending to use customized ERP software generally implement specific ERP modules that are technically feasible and also economical to implement. Such business organizations approach ERP Software Company with their enterprise resource planning software requirements

Followings are the functional modules of enterprise resource planning system;

1. ERP Production Planning Module- In the process of evolution of manufacturing requirements planning (MRP) II into ERP, while vendors have developed more robust software for production planning, consulting firms have accumulated vast knowledge of implementing production planning module. Production planning optimizes the utilization of manufacturing capacity, parts, components and material resources using historical production data and sales forecasting

2. ERP Purchasing Module - Purchase module streamline procurement of required raw materials. It automates the processes of identifying potential suppliers, negotiating price, awarding purchase order to the supplier, and billing processes. Purchase module is tightly integrated with the inventory control and production planning modules. Purchasing module is often integrated with supply chain management software.

3. ERP Inventory Control Module- Inventory module facilitates processes of maintaining the appropriate level of stock in a warehouse. The activities of inventory control involves in identifying inventory requirements, setting targets, providing replenishment techniques and options, monitoring item usages, reconciling the inventory balances, and reporting inventory status. Integration of

inventory control module with sales, purchase, finance modules allows ERP systems to generate vigilant executive level reports.

4. ERP Sales Module- Revenues from sales are live blood for commercial organizations. Sales module implements functions of order placement, order scheduling, shipping and invoicing. Sales module is closely integrated with organizations' ecommerce websites. Many ERP vendors offer online storefront as part of the sales module.

5. ERP Marketing Module- ERP marketing module supports lead generation, direct mailing campaign and more.

6. ERP Financial Module- Both for-profit organizations and non-profit organizations benefit from the implementation of ERP financial module. The financial module is the core of many ERP software systems. It can gather financial data from various functional departments, and generates valuable financial reports such balance sheet, general ledger, trail balance, and quarterly financial statements.

7. ERP HR Module HR (Human Resources) - is another widely implemented ERP module. HR module streamlines the management of human resources and human capitals. HR modules routinely maintain a complete employee database including contact information, salary details, attendance, performance evaluation and promotion of all employees. Advanced HR module is integrated with knowledge management systems to optimally utilize the expertise of all employees.

Each of these above functional modules of ERP software plays an important role. The organizations can choose to implement some of the modules or all according to their requirements. The companies opt for the modules which are technically and economically feasible to them. These modules streamline the flow of the communication across the company by integrating the various functional departments. The enterprise resource system is bound with all these functional modules. These distinct yet seamlessly integrated modules cover most of the functional needs of an organization. The functional modules of ERP software help to achieve efficiency of operations, cost savings and help to maximize the profits.

BUSINESS ORGANIZATION MODEL

Not only large enterprises but small businesses should also take ERP in their considerations. Companies have experienced various benefits for making ERP as their smart choice.

- **Managing the business under one system**
  The major benefit of ERP is the management of the core processes of the business in one tool. Main operations like human resources, finance, sales, manufacturing, etc. all get integrated under one system. In other words, ERP acts as a project management tool within the organization.
  For Example: As your sales team will confirm an order, the system will automatically generate statements to the finance department, inventory department as well as the purchasing department to update and replenish the stock.

- **Cost Reduction**
  Funding in ERP is a long-term investment. In the emerging trends of ERP, even open-source tools are also available in the market. For all the companies who don't want to invest much in the software can get this ready software in their systems.
  Not only the fixed capital is getting reduced, but there is effectiveness in working capital as well. Every process is getting managed on one tool, so there is no necessity of training the employees about different platforms, and they will be able to focus on other operations as well.

- **Improved Productivity**
  Tasks like generating reports, downloading and then sending the attachments, and still not able to meet the deadlines. If all these procedures can get accomplished in a single tool, then the productivity of employees will increase, and they will be able to focus on other services as well.
  Implementing ERP will lead to streamline the flow of information within the employees and increase the efficiency of day-to-day operations. Hence, improving the productivity of employees and the reduction of operational expenses.

- **Customer Relationship Management**
  The most important and difficult task in the business is maintaining the customer relationship. Being so occupied with paperwork, employees get

over from the customer accommodation. Resulting in the downgrade in lead generation and conversions as well.
ERP systems provide leverage to the employees so that they can focus on customer's problems and feedback. If all the work will get managed on a single platform, then ultimately, better communication will get done with customers.

- **Better Communication**
  Business hierarchy is something in which communication is lacking. Employees weren't able to get connected, and all their communication gets piled up in the mails. For every management, collaboration between employees is a must.
  ERP systems facilitate system communication tools to delegate tasks, group chats, file sharing, etc. to manage projects and other operations effectively and efficiently.

ERP PRODUCT EVALUATION

Evaluation and selection of ERP package is an essential criterion for successful ERP implementation. Quality of selection will have a long term impact on the processes of the organization. It is also not easy to switch to another product with concomitant scale of investment and complexities. This evaluation and selection process should be properly directed and normally comprises of following activities:

Formation of an evaluation committee: An ERP implementation is not an IT project but a business oriented development. Therefore, in addition to Chief Information Officer, this committee should comprise of all functional heads and driven by a top management representative. Since all business functions are represented in selection process, the chosen package would have wide acceptance subsequently.

Requirement Analysis: This analysis should outline functional expectations of various business divisions, such as warehouse, finance, procurement, from potential ERP package. Vital requirements specific to the company should be highlighted e.g.

- Must have Distribution Requirement Planning (DRP) functionality.
- In transit inventory and pallet tracking, as a part of shipping requirement.

- Multiple purchase orders linked to one bill of lading.
- Multi currency and multi locations functionality.

Requirement analysis forms a base for preparing a Request for Proposal (RFP), where important technical and commercial perquisites are incorporated. Common examples of technical perquisites: flexibility, Upgradability, User friendliness, field level security, Operating system and database compatibility. Common examples of commercial perquisites: cost, reference sites, high level project plan, resumes of consultants, post implementation support, financial health of the company, local presence, number of installation and upgrade.

Selection Criteria: A pre-determined selection Criteria should be ready before actual selection process commences. Selection criteria are normally in the form of questionnaire and point system, where each question represents a business or technical need. Weightage for each point or a group of points are predetermined which varies according to criticality of the issue. These processes help in making the selection process objective and transparent.

Selection Process: Selection process constitutes various stages as mentioned below:

1. **Short listing of vendors:** Hundreds of ERP packages are available in the market, which have different concept, architecture and sets of functionalities. Analyzing all the packages is not feasible. Organization need to identify a few best suited packages by looking at product literatures of vendor, finding out which product is being used by their peer organizations and getting help from external consultants. Once a few packages are short listed, respective vendors should be asked to respond to the RFP, as per its format.
2. **Demo and Presentation:** Responses from shortlisted vendors are evaluated by the selection committee after collating scores obtained by them and a consensus is reached about their final ranking. Anyone not fulfilling a predetermined vital requirement is eliminated at this stage. Top two or three vendors, are then invited for demo and presentation. Mode of presentation should be carefully scripted and send to the vendors in advance. They should be asked to walkthrough a particular business cycle through their vanilla software. They should be specifically asked to clarify any area of concern about their proposal, which may expose weak/ problem area of their offer.

3. **Site visit and contract negotiations:** After the committee has reached a decision on best suited package, visits to reference sites are imperative. The vendor should provide reference sites of similar size and industry, identical version and belonging to same geographical location. Team members should have look and feel of the systems operating at reference sites and ask pertinent questions covering overall satisfaction, functionality, cost/ time over run, support concerns etc. After site visit, if the committee members feel that their selection is right, they proceed with final negotiation and procurement. Negotiations are normally held on license and annual maintenance cost, payment plan including a leasing option, support issues and other commercial and legal terms.

ERP IMPLEMENTATION

An ERP implementation involves installing the software, moving your financial data over to the new system, configuring your users and processes, and training your users on the software. Choosing the right partner for implementing your ERP system is almost as important as selecting the right software in the first place. As with any large project, it's imperative that you to take things one step at a time. Thankfully, successful and calm ERP implementations are not only feasible, but actually quite common.

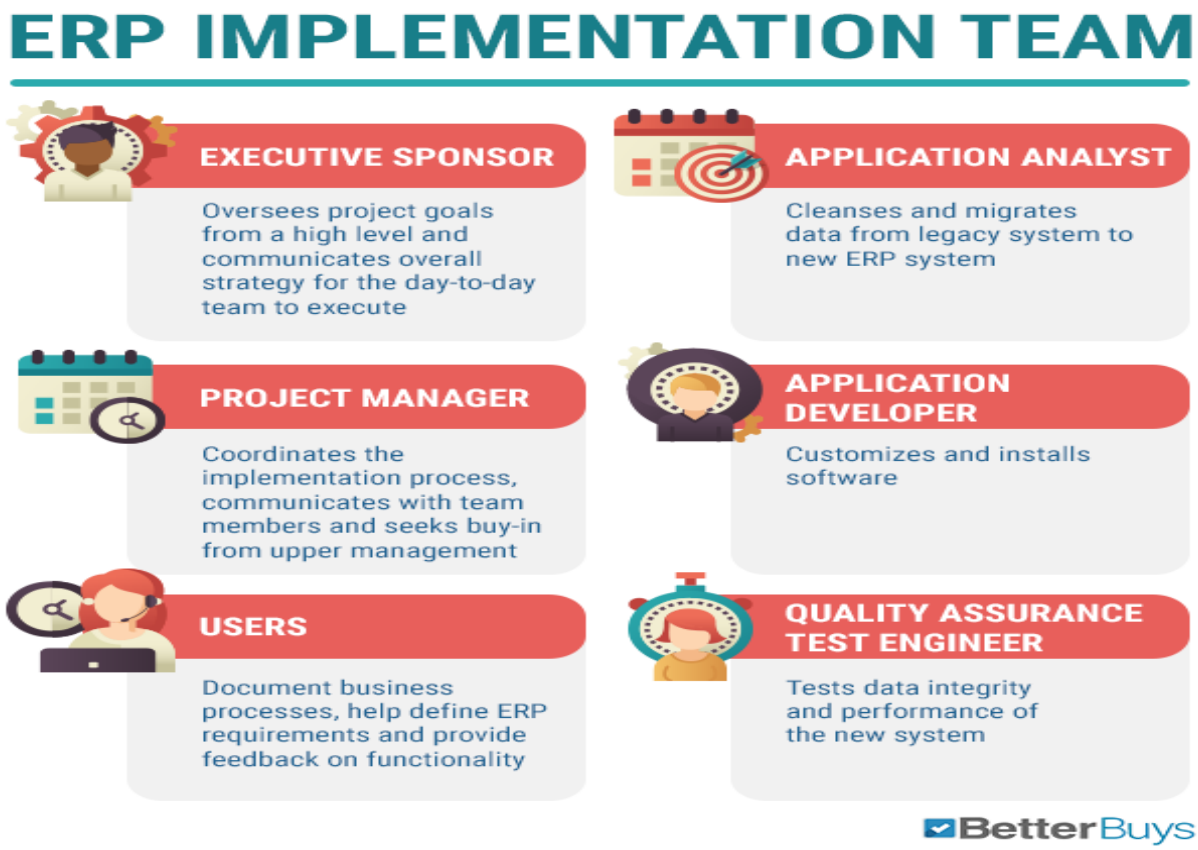
ERP implementation is the process of examining current business practices, strategic planning, streamlining operating procedures, installing and testing software, cleansing and migrating data, managing change, training users, going live and maintaining support. It's not a one-time event, but rather a continuous process or life cycle.

The seven key steps for a successful ERP implementation are:

1. Research
2. Installation
3. Migration
4. Testing
5. Training
6. Deployment
7. Support

1. Research

The first step is to define the need, vision and scope of an ERP solution. You'll need to form an implementation team that can communicate effectively and has the knowledge and commitment to guide the project from beginning to end. The team should include the following roles:



The team should document and examine current business processes and map out how they flow from one department to another. It's important to identify common problems or errors, duplicated or unnecessary efforts and missed opportunities with customers.

2. Installation

ERP software installation is also an opportunity to evaluate your current operations and re-engineer business processes into standard operating procedures. Figure out which processes to automate or keep manual and then design a blueprint of how new business practices will flow. The application developer will be responsible for installing the software and building the infrastructure, such as networking facilities and data collection or display devices.

3. Migration

The next step of ERP implementation is data migration, or transferring all records and info to the new system. Many organizations store their customer, supplier and physical asset records in multiple formats and databases that contain errors and unnecessary information. This data should be reviewed and edited for accuracy and uniformity before migration begins. Any out-of-date information should also be removed. When the data has been updated and verified, the application analyst migrates the data to the new system. This step involves setting up new databases, mapping database fields between the old and new systems, and transferring the data.

4. Testing

The quality assurance test engineer is in charge of the next step: testing the system. All interfaces, functionality and reports should work with real-life scenarios and transaction data. Users should also validate that business processes are flowing correctly between departments. It's vital the system is thoroughly tested before the go-live date. User training, discussed below, is another opportunity to see if there are any errors in the system.

5. Training

Training users requires significant time and effort, especially considering employees are also expected to carry out their normal responsibilities throughout the process. How long it takes will depend not only on the size and complexity of the ERP solution, but also on the mentality that employees have about changing the way they work. Users may "find it difficult to change roles, processes and behaviors that they may have learned over many years of work," according to Jennifer Gostisha, Senior Manager at Epicor. "Managing change is a constant, ongoing process that needs to start from day one and continue throughout the implementation to the end-user training at the close of the project."

In the beginning, you should prioritize thoroughly training the trainers. Provide opportunities for users to offer feedback and for the implementation team to act on it. Consistent, meaningful communication between users, trainers, the implementation team and the vendor will decrease the likelihood of lost productivity after deployment. Some vendors also provide user training and on boarding support, such as live classes, e-learning modules or written manuals.

Training may be included with the software purchase or require an additional fee. Be sure to ask your vendor what type of support it offers to new users.

6. Deployment

Depending on how large an ERP project is and the resources available, companies can choose between three methods when going live and deploying the software:

- **Big bang** – All users transition from the legacy system to the new system in a single day. This method is the fastest and cheapest option, but technical difficulties can cause major operational problems.
- **Phased approach** – Users transition by business unit or function. The implementation team can improve transitions with each group, but the process will take longer, and integrating ERP modules individually can be difficult.
- **Parallel operation** – Users run both systems simultaneously. Because there's a system to fall back on, this method is the least risky. However, users need to spend more time duplicating their work, and running two systems is expensive.

7. Support

Many companies believe that ERP implementation ends on the go-live date. However, it requires ongoing maintenance of the software and support for its users. Budgeting time and resources to identify issues and fix errors will be important throughout the entire life cycle of the ERP solution. In addition, after going live, start evaluating the success of the ERP project. Consider key performance metrics that are tied back to the goals and objectives of the project:

- Costs compared to the budget
- Return on investment
- Decrease in human error
- Increase in manufacturing or supply chain productivity, customer engagement, etc.

Failure of ERP implementation

1. Lack of defined goals

ERP systems implementation often fails even before they start. Quite often there are companies who do not know the reasons for their decision to buy an ERP in the first place. They become convinced that the ERP software implementation would

make all their business related issues go away or they might just be joining the rat race. They need to adopt a more realistic approach and sense as to what it is that they hope to achieve with the new ERP. It could be a reduction in operational losses or facilitation of seamless flow of information between different departments or reorganization/reduction of their manpower. Defined goals must be clearly articulated which would allow them to measure the success of an ERP system implementation.

2. The wrong or undefined scope of the project

One of the biggest mistakes that any company makes is the wrong or undefined scope of the project. The scope of the project needs to be aptly defined so that there is no scope for confusion.

3. Overselling the system by the ERP Vendor leading to expectations mismatch

Many a time, Vendor's Sales teams tend to oversell the product and its benefits. An executive may be tempted to give an estimate of 1-2 months implementation period to close the deal while it actually may take around 5. Or the promises made could be that "All" the information would be available to you "in real time" "at the click of a button" or "All your business problems with vanish with ERP". Such practices lead to expectation mismatch and tend to break the trust between the ERP Vendor and the Customer. It could also mean a loss of face for the Management who had pushed for ERP system implementation and announced these unrealistic targets to their teams.

4. Lack of change management

Generally considered a linchpin in a company's success, ERP software doesn't always have a smooth implementation, especially if the company fails to pay sufficient attention to change management. Not being able to manage the change is perhaps one of the major reasons for ERP implementation failure. Please ensure that the right sets of people who are receptive to change are involved in the Core ERP teams. Incentivize people who show a positive attitude towards the Change.

5. Customization

Customization requires major/minor changes in the source code of the ERP system implementation. This is a very complex process and requires a lot of time and efforts at both the party's sides. Heavy customization would inadvertently push back go-live dates and also lead to cost escalations. Time is of the great essence during ERP software implementation as organizations cannot be in a state of flux

for long periods. Even if there are customizations, the Companies should attempt to only do Show Stopper Customizations first and then Go-Live on the ERP. Rest of the Customizations can be delivered post-Go-Live too. Otherwise waiting for all the Customizations would lead to longer Go-Live times which could mean organizations losing faith in ERP.

6. Lack of proper training and building internal capacity

Training is one of the stages of ERP project implementation. It is important that the Users take the training exercise extremely seriously and thoroughly understand each and every process that they have to work on. The Test Cases prepared by the Company must be thoroughly run with the Test Data.

The lifespan of ERP extends to decades. During this time new employees will join in and some of the existing employees will leave. So it is important that Companies have an internal resource pool (Champion Users) which is trained well in ERP. This internal capacity building would mean that the new employees can be easily trained by these Champion Users without any dependence on the ERP system implementation company.

7. Lack of clearly identified resources for implementation

One of the most critical factors in ERP implementation failure is a lack of clearly defined Single Point of Contact (SPOC) and the Steering Group, for the successful implementation. ERP implementation is an enterprise-wide exercise and hence clarity of communication between Steering Group, SPOC, and the individual Users must be maintained.

8. Handling User's resistance

Its human tendency to resist anything new. People will have all sorts of fears and misconceptions about the ERP. Please ensure that your employees are involved heavily in the implementation and are well informed about all the aspects of the ERP. All your ERP related decisions, your decision of getting an ERP to its go-live dates, should be communicated companywide. All this communication will help you get their ownership.

9. Lack of Communication with the ERP Vendor

Any ERP related queries should be openly discussed with your ERP vendor. It will put your worries to ease and help them analyze your needs. Consistent communication during the ERP implementation is extremely important. Regularly

schedules meet and calls can often be very helpful in making the whole process smooth.

10. Unrealistic expectations of the Users

Unrealistic expectations on the part of the user also tend to be one of the causes of dissatisfaction among them. There are certain processes which you may have to keep out of the ERP. So let us say if there is a Government Tender. The user may have an expectation that the Tender response will be generated automatically as per the Tender Conditions from the ERP. This is an unrealistic expectation as every Tender has different terms and conditions and formats. While the data you need to fill up in the Tender may come from ERP but an ERP cannot generate a response to the Tender automatically. Having realistic expectations from your ERP system would ensure that the ERP implementation doesn't fail.

CRM (CUSTOMER RELATIONSHIP MANAGEMENT)

Business people started using the term Customer Relationship Management (CRM) since the early 1990s when the concept of business started to change from being transactional to relational. CRM directly contributes towards customer benefits and the growth of businesses.

Information Technology plays a very critical role in identifying, acquiring, and retaining the customers, and thereby managing a healthy relationship with them.

There can be multiple definitions of CRM from different perspectives −

- From the viewpoint of the Management, CRM can be defined as an organized approach of developing, managing, and maintaining a profitable relationship with customers.
- By equating the term with technology, the IT organizations define CRM as software that assists marketing, merchandising, selling, and smooth service operations of a business.
- As per Franics Buttle, World's first professor of CRM, it is the core business strategy that integrates internal processes and functions, and external networks, to create and deliver value to a target customer at profit. It is grounded on high quality customer data and information technology.

The primary goal of CRM is to increase customer loyalty and in turn improve business profitability.

Following diagram shows the ingredients that work together to form a successful CRM system.

Here are some of the important ingredients of CRM −

- **Analytics** − Analytics is the process of studying, handling, and representing data in various graphical formats such as charts, tables, trends, etc., in order to observe market trends.
- **Business Reporting** − Business Reporting includes accurate reports of sales, customer care, and marketing.
- **Customer Service** − Customer Service involves collecting and sending the following customer-related information to the concerned department −
    - Personal information such as name, address, age
    - Previous purchase patterns.
    - Requirements and preferences.
    - Complaints and suggestions.
- **Human Resource Management** − Human Resource Management involves employing and placing the most eligible human resource at a required place in the business.
- **Lead Management** − Lead Management involves keeping a track of the sales leads and distribution, managing the campaigns, designing customized forms, finalizing the mailing lists, and studying the purchase patterns of the customers.

- **Marketing** − Marketing involves forming and implementing sales strategies by studying existing and potential customers in order to sell the product.
- **Sales Force Automation** − Sales Force Automation includes forecasting, recording sales, processing, and keeping a track of the potential interactions.
- **Workflow Automation** − Workflow Automation involves streamlining and scheduling various processes that run in parallel. It reduces costs and time, and prevents assigning the same task to multiple employees.

Objectives of CRM

The most prominent objectives of using the methods of Customer Relationship Management are as follows −

- **Improve Customer Satisfaction** − CRM helps in customer satisfaction as the satisfied customers remain loyal to the business and spread good word-of-mouth. This can be accomplished by fostering customer engagement via social networking sites, surveys, interactive blogs, and various mobile platforms.
- **Expand the Customer Base** − CRM not only manages the existing customers but also creates knowledge for prospective customers who are yet to convert. It helps creating and managing a huge customer base that fosters profits continuity, even for a seasonal business.
- **Enhance Business Sales** − CRM methods can be used to close more deals, increase sales, improve forecast accuracy, and suggestion selling. CRM helps to create new sales opportunities and thus helps in increasing business revenue.
- **Improve Workforce Productivity** − A CRM system can create organized manners of working for sales and sales management staff of a business. The sales staff can view customer's contact information, follow up via email or social media, manage tasks, and track the salesperson's performance. The salespersons can address the customer inquiries speedily and resolve their problems.

Types of CRM

In the past twenty years, the focus of global markets has shifted from sellers to customers. Today, customers are more powerful than sellers, if we consider the driving factors of market. We have different types of CRM according to the changes in customer portfolios, speed of business operations, requirement of handling large data, and the need of sharing information, resources, and efforts jointly.

CRM systems are divided based on their prominent characteristics. There are four basic types of CRM systems −

- Strategic CRM
- Operational CRM
- Analytical CRM
- Collaborative CRM

The following table lists the types of CRM and their characteristic features –

Type	**Characteristic**
Strategic CRM	Customer-centric, based on acquiring and maintaining profitable customers.
Operational CRM	Based on customer-oriented processes such as selling, marketing, and customer service.
Analytical CRM	Based on the intelligent mining of the customer data and using it tactically for future strategies.
Collaborative CRM	Based on application of technology across organization boundaries with a view to optimize the organization and customers.

1. Strategic CRM

Strategic CRM is a type of CRM in which the business puts the customers first. It collects, segregates, and applies information about customers and market trends to come up with better value proposition for the customer.

The business considers the customers' voice important for its survival. In contrast to Product-Centric CRM (where the business assumes customer requirements and focuses on developing the product that may sometimes lead to over-engineering), here the business constantly keeps learning about the customer requirements and adapting to them.

These businesses know the buying behavior of the customer that happy customers buy more frequently than rest of the customers. If any business is not considering this type of CRM, then it risks losing the market share to those businesses, which excel at strategic CRM.

2. Operational CRM

Operational CRM is oriented towards customer-centric business processes such as marketing, selling, and services. It includes the following automations: Sales Force Automation, Marketing Automation, and Service Automation.

Salesforce is the best suitable CRM for large established businesses and Zoho is the best CRM for growing or small-scale businesses.

Sales Force Automation

SFA is the application of technology to manage selling activities. It standardizes a sales cycle and common terminology for sales issues among all the sales employees of a business. It includes the following modules −

- **Product Configuration** − It enables salespersons or customers themselves to automatically design the product and decide the price for a customized product. It is based on if-then-else structure.
- **Quotation and Proposal Management** − The salesperson can generate a quotation of the product prices and proposal for the customer by entering details such as customer name, delivery requirements, product code, number of pieces, etc.
- **Accounts Management** − It manages inward entries, credit and debit amounts for various transactions, and stores transaction details as records.
- **Lead Management** − It lets the users qualify leads and assigns them to appropriate salespersons.
- **Contact Management** − It is enabled with the features such as customers' contact details, salespersons' calendar, and automatic dialing numbers. These all are stored in the form of computerized records. Using this application, a user can communicate effectively with the customers.
- **Opportunity Management** − It lets the users identify and follow leads from lead status to closure and beyond closure.

Marketing Automation

Marketing automation involves market segmentation, campaigns management, event-based marketing, and promotions. The campaign modules of Marketing Automation enable the marketing force to access customer-related data for designing, executing and evaluating targeted offers, and communications.

Event-based (trigger) marketing is all about messaging and presenting offers at a particular time. For example, a customer calls the customer care number and asks about the rate of interest for credit card payment. This event is read by CRM as the customer is comparing interest rates and can be diverted to another business for a better deal. In such cases, a customized offer is triggered to retain the customer.

Service Automation

Service automation involves service level management, resolving issues or cases, and addressing inbound communication. It involves diagnosing and solving the issues about product.

With the help of Interactive Voice Response (IVR) system, a customer can interact with business computers by entering appropriate menu options. Automatic call routing to the most capable employee can be done.

Consumer products are serviced at retail outlets at the first contact. In case of equipment placed on field, the service expert may require product servicing manual, spare parts manual, or any other related support on laptop. That can be availed in service automation.

3. Analytical CRM

Analytical CRM is based on capturing, interpreting, segregating, storing, modifying, processing, and reporting customer-related data. It also contains internal business-wide data such as **Sales Data** (products, volume, purchasing history), **Finance Data** (purchase history, credit score) and **Marketing Data** (response to campaign figures, customer loyalty schemes data). **Base CRM** is an example of analytical CRM. It provides detailed analytics and customized reports.

Business intelligence organizations that provide customers' demographics and lifestyle data over a large area pay a lot of attention to internal data to get more detail information such as, "Who are most valuable customers?", "Which consumers responded positively to the last campaign and converted?", etc.

Analytical CRM can set different selling approaches to different customer segments. In addition, different content and styling can be offered to different customer segments. For the customers, analytical CRM gives customized and timely solutions to the problems. For the business, it gives more prospects for sales, and customer acquisition and retention.

4. Collaborative CRM

Collaborative CRM is an alignment of resources and strategies between separate businesses for identifying, acquiring, developing, retaining, and maintaining valuable customers. It is employed in B2B scenario, where multiple businesses can conduct product development, market research, and marketing jointly.

Collaborative CRM enables smooth communication and transactions among businesses. Though traditional ways such as air mail, telephone, and fax are used in communication, collaborative CRM employs new communication systems such as chat rooms, web forums, Voice over Internet Protocol (VoIP), and Electronic Data Interchange (EDI).

There are collaborative CRMs with in-built **Partner Relationship Management (PRM)** software application which helps in managing partner promotions. **SugarCRM** is a popular collaborative CRM. It enables expert collaboration and provides state-of-the-art social capabilities.

Future Trends in CRM system

Integrating Data from Multiple Channels

The CRM solution providers are working on moving social media data to more secure communication channel. They are also exploring how they can integrate unstructured data coming from multiple channels such as Email and mobile smartphones.

Handling Big Data

As the data is penetrating from multiple channels with high volume, velocity, and variety, the CRM solution providers are exploring how this big data can be managed well to be able to use effectively.

Shifting to Cloud-based CRM

The businesses prefer cloud-based CRM software to overcome the problems with on premise CRM software (in which every new feature development requires an expensive upgrade). The cloud-based CRM also lessens the burden of business for investing in infrastructure.

Social CRM

The customers are into the practice of reading reviews, recommendations, and judging the product or service before deciding to purchase. The businesses are keen to employ social CRM tools in their CRM software as the social media can bring an insight of customer preferences and behavior.

The Mobile CRM is expected to be Powerful

Today's CRM solution providers are investing a handsome amount to bring more rigor in the mobile platforms of CRM applications.

Using CRM data effectively

The historical and current data of the customers is so huge that the CRM users spend more time in entering the same in the system than using it effectively for beneficial purpose. CRM solution providers are also working on providing simpler and easier ways of handling customer data using mobile devices.

CRM Software Systems with Wearable

It is the next big revolution in the development of CRM software systems. Wearable are the devices worn by the consumers to track their health and fitness information.

If CRM applications are integrated with wearable computing devices, then the businesses can get benefited by having real time information of customers and access to their account data. The businesses can then engage with their customers effectively and discover opportunities of selling and enhancing customer relationships.

Creating Best Customer Experiences

Though life is not all segregated between black and white moments; for the customers and businesses it is. The customers remember business products and services by associating with best and worst experiences. The businesses using CRM are placing the activities related to making their customers feel good in their list of top priorities.

Benefits of CRM module

1. Maintain a centralized database across the organization

CRMs allow your entire sales org to keep all prospect information — over any duration of time — in a central database. This allows for quick cross-team access as well as the ability to easily manage all information via a shared location. CRMs help reps avoid spending time digging through files and records to find the information they need about prospects to follow up and close deals.

2. Manage all communication and interactions with prospects.

All communication, both internal (rep to rep) and external (rep to prospect), can be managed through a CRM. This allows reps to track all parts of the buyer's journey, including every interaction, email, phone call, and more.

For example, your CRM will help a rep determine if and when they need to reach back out to a specific prospect. It will also help your reps remember whether or not they already sent a prospect the resources they requested.

3. Automate data entry.

With a CRM, your team will never have to spend time logging emails, calls, meetings, and interactions — all of this information will be automatically collected and aggregated within the system. Additionally, a CRM allows reps to update all deals by the stage they're in — then, the system will automatically handle the rest (e.g. weighting, summation, visualization), keeping this process as efficient as possible for everyone involved.

4. Be reminded to follow up with prospects.

A CRM tracks all of your prospect activity, which helps your reps know when they need to follow up with specific prospects. When reps are reminded about specific follow ups, they're able to schedule their contact at a point in time when their support is most helpful to a prospect. This way, reps increase the chances of them converting more of these leads into customers.

5. Organize contact data.

CRMs allow your team to easily keep track of every contact (and their related data), no matter their buyer's journey stage. In fact, reps will be able to see if a contact visited your company website, downloaded content from the site, or spoke with another member of your sales team already. Additionally, reps can log notes from their calls or email interactions with their contacts and leads. The best part? All of this information is *always* searchable within the CRM.

6. Segment your customers.

Have you or your reps ever wanted to create a list of contacts to reach out to based on specific criteria? CRMs allow you to sort contacts by data that you've collected about them over time. For example, a rep might filter by location, company size, or deal stage. This way, your team members will always maintain a clear idea of how to position outreach for each segment, increasing the probability of conversion.

7. Create sales reports.

CRMs allow your team to collect and organize data about prospects and deals using reporting features such as sales dashboards and reports. These allow reps to better automate and manage their pipelines, deals, and contacts. They can also evaluate their personal performance and keep track of their goals and necessary work to reach their quotas.

Sales managers can use these sales reports to see how their team is tracking towards quota attainment and review the number of closed deals. VPs and other organization leaders can also monitor the amount of revenue that's been generated.

8. Automate forecasting for your sales performance.

The key to any successful sales organization is the ability to plan strategically and make informed decisions. With the CRM reports I just mentioned, you can pull in key metrics like monthly recurring revenue (MRR) and year-over-year (YOY) growth which make it easier for sales leaders to identify trends and develop performance-related forecasts. Plus, CRMs allow reps and sales managers to see which activities and sources are the most profitable lead generators for reps. This data helps team leaders create sales projections for upcoming months and adjust pipeline estimates as necessary.

9. Scale your sales processes over time.

As mentioned, a CRM will provide your sales team with one place where they can keep track of leads, prospects, and customers over any duration of time. CRMs also allow you to review specific activities like emails, calls, and meetings booked. Sales managers can then use this data to identify patterns and see which sales processes are working for their team and which ones could be improved — which is how your sales team can use information stored in the CRM to scale your processes as your business grows.

10. Ensure team communication is facilitated.

Ensure effective team communication is facilitated throughout your sales org and among reps with the help of the CRM. This communication is critical to maintain a specific brand image among all reps who are interacting with prospects as well as ensure reps are learning from each other and working together to reach quota. With a CRM, your team can do this by tagging reps and managers members on specific deals they want to bring them onto. Sales leaders and reps can also use the system to reassign specific leads with the click of a button. Lastly, reps don't need to leave the system to write and send emails to team members to have these discussions — instead, all communication can be facilitated easily from within the CRM.

11. Keep the same software as your company grows.

As your company grows, a CRM will grow with you — that's the beauty of this type of software. Whether it's tracking more leads, organizing more contact information, or recording a greater number of interactions with prospects, CRMs are meant to grow alongside your business. And this isn't just true for your sales org — your CRM can assist other teams within your organization as you grow, too. Examples include customer service and marketing — these teams can pull from your prospect information to contact them, personalize content for them, tailor CTAs and product details towards their needs, and more.

12. Make administrative tasks efficient.

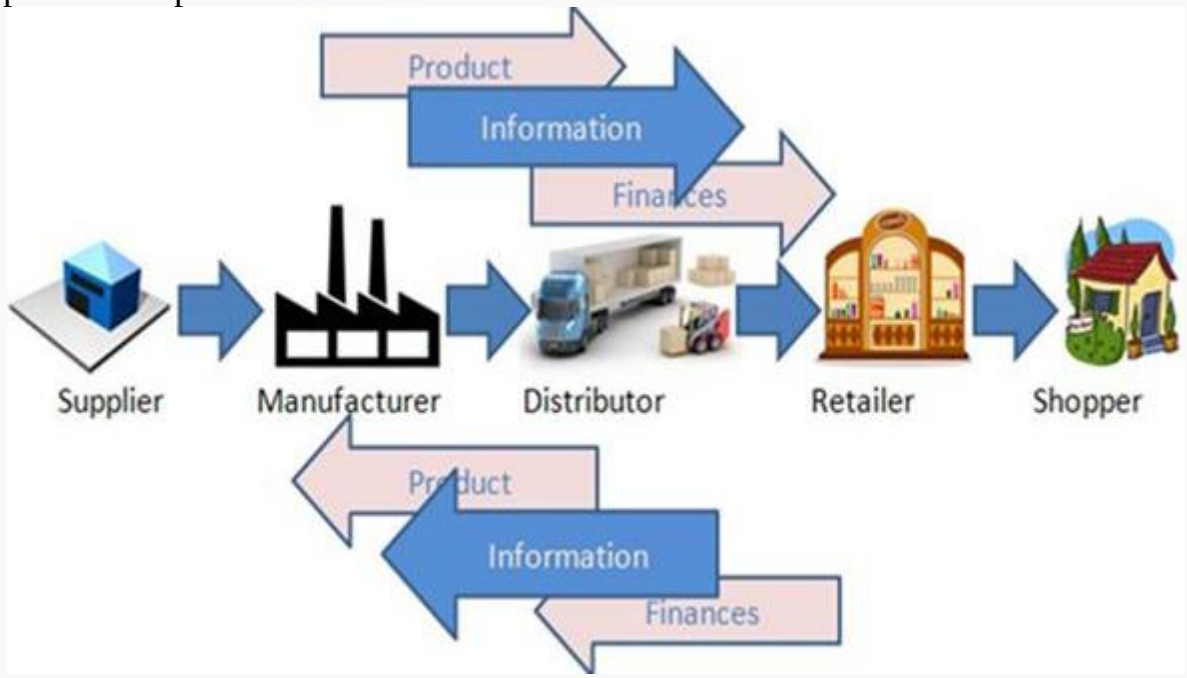
All of your administrative tasks — such as manual data entry, hunting for email chains, recording conversations, and saving contact information — will be simplified with the implementation of a CRM. In fact, a CRM automates a lot of these tasks so reps can spend their time and resources on more impactful tasks. Even though administrative tasks might not directly impact revenue, they impact the schedules of members of your sales org and how much time they spend on working on those tasks versus with leads and prospects.

SCM (SUPPLY CHAIN MANAGEMENT)

At the most fundamental level, supply chain management (SCM) is management of the flow of goods, data, and finances related to a product or service, from the procurement of raw materials to the delivery of the product at its final destination. Although many people equate the supply chain with logistics, logistics is actually just one component of the supply chain. Today's digitally based SCM systems include material handling and software for all parties involved in product or service creation, order fulfillment, and information tracking—such as suppliers, manufacturers, wholesalers, transportation and logistics providers, and retailers.

Supply chain activities span procurement, product lifecycle management, supply chain planning (including inventory planning and the maintenance of enterprise assets and production lines), logistics (including transportation and fleet management), and order management. SCM can also extend to the activities

around global trade, such as the management of global suppliers and multinational production processes.



The history of SCM

Supply chains have existed since ancient times, beginning with the very first product or service created and sold. With the advent of industrialization, SCM became more sophisticated, allowing companies to do a more efficient job of producing and delivering goods and services. For example, Henry Ford's standardization of automobile parts was a game-changer that allowed for the mass production of goods to meet the demands of a growing customer base. Over time, incremental changes (such as the invention of computers) have brought additional levels of sophistication to SCM systems. However, for generations, SCM essentially remained a linear, siloed function that was managed by supply chain specialists.

The internet, technology innovation, and the explosion of the demand-driven global economy has changed all that. Today's supply chain is no longer a linear entity. Rather, it's a complex collection of disparate networks that can be accessed 24 hours a day. At the center of these networks are consumers expecting their orders to be fulfilled—when they want them, the way they want them.

We now live in a time of unprecedented global business and trade, not to mention continual technology innovation and rapidly changing customer expectations.

Today's best supply chain strategies call for a demand-driven operating model that can successfully bring people, processes, and technology together around integrated capabilities to deliver goods and services with extraordinary speed and accuracy.

Though SCM has always been an enterprise fundamental, the supply chain today is more vital than ever as a marker for business success. Companies that can effectively manage their supply chain to adapt to today's volatile and ever-changing, technology-driven business

Supply Chain Management Processes

According to **Global Supply Chain Forum (GSCF)**, there are several Supply Chain Management processes given as under:

1. **Customer Relationship Management**: It plans, controls and assesses customer interaction and data, during the lifecycle, with the aim of building strong relations.

2. **Customer Service Management**: It assists in administering product and service contracts.
3. **Supplier Relationship Management**: It guides in developing and maintaining a good relationship with the suppliers. At the time of selecting suppliers, priority is given to suppliers capability regarding quality, reliability, innovation, services and cost reductions.
4. **Manufacturing Flow Management**: It covers activities associated with the movement of products inside and outside the factories, to have flexibility in the manufacturing process.
5. **Demand Management**: A comprehensive structure is provided to best understand the customer's needs.
6. **Order Fulfilment**: It encompasses all the activities which identify customer needs, frames the logistics network and fulfils orders.
7. **Product Development and Commercialization**: A framework is provided for developing and introducing new products into the market.
8. **Returns Management**: It is concerned with functions associated with returns, reverse logistics etc. It is an indispensable part of the SCM process and is required in both the upstream and downstream movement of goods for the best possible use of organizations resources.

Supply Chain Management is an improvement over the traditional logistics management which helps in the timely delivery of the products to customers. It also plays a crucial role in increasing business profits, by reducing the overall cost, which improves its competitiveness also.

Functions of SCM

1. Purchasing

The first function of supply chain management is purchasing. In the manufacturing process, raw materials are required to product goods and products. It is important that these materials are procured and delivered on time so that production can begin. For this to occur, coordination with suppliers and delivery companies will be required to avoid any potential delays.

2. Operations

Demand planning and forecasting is usually required before materials can be procured, as the demand market will dictate how many units to be produced and how much material is required for production. This function is important in supply chain management as organizations must accurately forecast demand to avoid having too much or too little inventory that will lead to losses in revenue. Therefore, demand planning and forecasting must be tied in with inventory management, production, and shipping to avoid such mistakes.

3. Logistics

Logistics is the part of supply chain management that coordinates all aspects of planning, purchasing, production, warehousing, and transportation so that the products will reach the end-consumer without any hindrances. It is helpful to have adequate communication between multiple departments so that products can be shipped to customers quickly, for the lowest cost.

4. Resource Management

Production consumes raw materials, technology, time, and labor. Resource management ensures that the right resources are allocated to the right activities in an optimized manner. This will ensure that an optimizes production schedule is created to maximize the efficiency of the operations.

5. Information Workflow

Information sharing and distribution is what keeps all of the other functions of supply chain management on track. If the information workflow and communication are poor, it could break apart the entire chain.

6. Integration

This forms the crux of the supply chain and is meant to coordinate communications to produce effective and timely results. It can include innovation of new software or advanced technological processes to improve communications.

7. Distribution

This deals with the management of logistics across wholesalers, retailers, and customers. This may mean keeping an eye on the shipment, and other details.
In addition to these, there are also some subsidiary functions that an effective supply chain management process fulfills, such as:

- Aligning distribution flows
- Integrating the functions from manufacture to delivery
- Designing complex and advanced systems
- Managing and coordinating resources

Supply Chain strategies

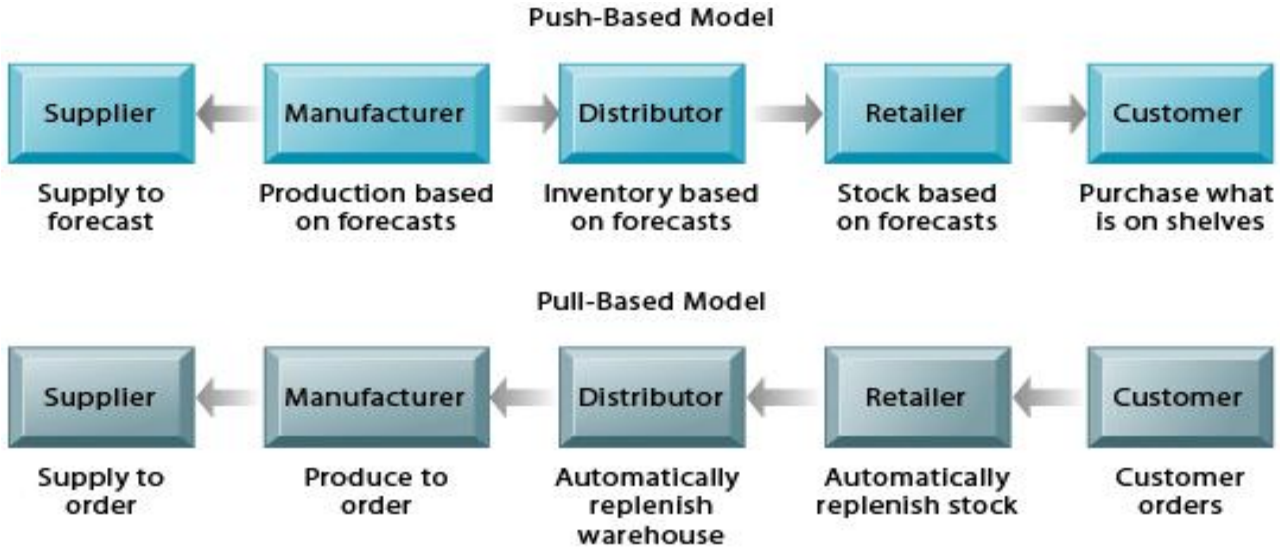
1. Push based supply chain

A company using the push system will forecast demand and employ the Material Requirements Planning (MRP) process to produce goods and services ahead of time. This is related to the Just-in-Case concept. It is marketing oriented approach

This forecast may not always be accurate and will require inventory stockpiling, but it remains a useful strategy for products that tend to have a lot of work in progress (WIP) or long lead times. The push system is particularly useful for products with low demand uncertainty or with high importance of economies of scale in reducing costs.

Example

The Material Requirements Planning (MRP) mentioned above is a push system since there are no prior WIP limitations. Goods are produced under the master production schedule with no regard to the current status.



2. Pull based supply chain

The Pull System is a lean manufacturing method that uses the Just-in-Time strategy of not producing goods until an order is received. Instead of forecasting demand, the pull system produces 'as needed'. This is particularly useful for companies that deal with high demand uncertainty, low product mix, and low importance of economies of scale. It is customer oriented approach

Example

The classic Kanban is a pull system since there are a fixed number of cards available, and this limits the WIP.

3. Push-Pull Strategy

This is an ideal mix of both push and pulls strategy in which the first half of the system is based on push method and remaining half as pull based. The interface between two models is push-pull boundary. The push-pull strategy is usually suggested for products with high demand uncertainty and high importance of economies of scale.

Example

Dell pre-orders and stocks up on raw materials and components. However, from this point on, they do not produce their computers until an order is actually placed. They initially "push", but then switch to "pull'' in the production and assembly process.

Types of Supply Chain Management (SCM) Systems

Depending on the functions the supply chain management systems perform, they are classified into two categories, namely, supply chain planning systems, and supply chain execution systems.

1. Supply Chain Planning Systems

These systems provide information that helps businesses in the planning of their supply chain. Some of the important supply chain planning functions are as follows:

- Forecasting demand for specific products and preparing sourcing and manufacturing plan for those products.
- Estimating the quantity of the product to be manufactured in a given time period
- Deciding the location where the finished goods are to be stored
- Identifying the transportation mode to be used for delivering the products
- Setting the inventory levels for raw materials, intermediate products, and finished goods
- Determining the product quantity a business should make in order to meet all its customers' demands

2. Supply Chain Execution Systems

These systems provide information that helps businesses in the execution of their supply chain steps. Some of the major supply chain execution functions are as follows:

- Managing the flow of products from the manufacturers to distributors to retailers and finally to customers in order to ensure the accurate delivery of products
- Providing information about the status of orders being processed so that the vendors could provide the exact delivery dates to customers
- Tracking the shipment and accounting for the products that have been returned or are to be repaired and serviced

Benefits of SCM system

1. Better Flow of Materials, Products and Information

Supply chains are all about flow. Put simply, supply chains are always chasing after shorter times between manufacturing a product and getting it out to the customer that ordered it. Achieving this requires quite a few variables that must also be running at maximum efficiency to get these delivery times down. For example, the quality of materials used to manufacture the final customer-facing product is one such consideration. Not only that, but supply chain officers have to keep in mind demand fluctuation, inventory space and organization, how to effectively ship their goods and how to keep costs as low as possible. That's quite a few plates to keep spinning all at once, and when one falls, the rest suffer.

2. Improved Data Visibility

Analytics has recently become the talk of the town in the world of supply chain management. In fact, most SCM software systems contain features that drill down into the daily processes of a supply chain to give decision-makers information on underperforming areas and what to expect in the near future in regards to demand. These features give users a number of different analytical strategies to employ depending on the size, output and complexity of the supply chain in question. Some systems take it a step further and provide cutting edge forecasting tools that can give demand insights in real-time.

Analytical tools are attractive, but if a company is not able to act on the insights provided by these features, they can cause more trouble than they are worth. A messy jumble of data being stored and never acted upon doesn't help anybody.

3. Enhanced Financial Practices and Cost Cutting

Having an uncomplicated and efficient flow of information and goods is important, but financials make the world go around. Improving cash flow is a common sticking point for many supply chains. Luckily, SCM software benefits include strong accounting features that can help work out the kinks in these processes. Automating manual tasks not only helps save money on the floor of a warehouse but also in the accounting office. Removing tedious manual entry of important accounting information can lead to fewer errors and more accurate billing practices. Many systems provide single-entry data input that carries a single input throughout a complicated accounting document. This way, human employees don't have to mindlessly calculate, recalculate and input data while trying to keep their figures perfect.

4. Vendor Relationships

One of the biggest pieces of supply chain management software is the evaluation of supplier relationships. Many supply chain management systems contain features that allow users to compare supplier costs and support structures. These operational benefits allow supply chain managers to make meaningful choices on which suppliers to form partnerships with. A transparent view of what vendors charge, how they support products and how they deliver gives companies the chance to see if a certain supplier is a good fit. This can help save a great deal of time when it comes to settling on a new supplier.

It's important to note that a whole new set of software solutions has sprung up called *supplier relationship management software*. However, in many cases, conventional SCM solutions contain much of the same kinds of functionality that aids companies in getting a competitive advantage while managing and improving vendor relationships.

5. Distributed Footprint

Most businesses of a larger size have enormous volumes of materials and supplies flowing around multiple locations. When supply chain complexity is too much for managers and others to assess through a simple spreadsheet or document, supply chain management software helps to order and organize these processes. This way,

decision-makers can see at a glance how much of something they're getting, where it's coming from and how they are using it. In a sense, SCM software breaks down massive amounts of supply shipments into something that company leaders can peruse in detail.

6. Lean Inventory and On-Demand Supply Chains

It's often been said that SCM doesn't focus on internal inventory, but comprehensive supply chain management software will often include tools for managing inventory. Many SCM systems have the kind of functionality that allows managers to pursue a lean inventory or on-demand model. Rather than having to stock large volumes of incoming supplies in a warehouse, managers can craft precise supply schedules and cut back on storing an excess of unneeded inventory. Having enough inventories to meet demand is critical, having too much inventory devours valuable warehouse space and uses resources to hold.

7. Cloud-Based Benefits

With the rise of cloud-based computing, maintaining software and complicated IT infrastructure can be taken out of the equation. Updates and upgrades to your SCM system are available in real-time without slow-down or costly time spent upgrading station after station. Not only that, but as technology continues to improve, we see helpful additions like mobile access being included in more and more systems. Now, supply chain managers can be on the move while still being connected to the vital processes of the day.

In the past, smaller businesses would have been unable to access these supply chain management system benefits for one simple reason — they cost too much. Small businesses had to rely on simple tools such as Excel and MS Project, to handle all of their planning, information and financials. Meanwhile, larger companies took their supply chains to the next level with comprehensive software suites and helpful cost-cutting tools.

8. Liability and Risk

Supply chain management software also often works in conjunction with other systems, like enterprise planning tools. These systems can work in concert to

handle important tasks like liability and risk assessment. Businesses have to assess risk and liability in the right ways before moving forward with a plan or adjustment. All known and unknown quantities have to be accounted for before big changes can be put into place. Otherwise, the investment may not be worth it. Supply chains deal with numerous risk factors that can affect the bottom line. Some of these include workplace safety, product quality and forming relationships with new suppliers.

EMS MODEL

An Environmental Management System (EMS) is a set of processes and practices that enable an organization to reduce its environmental impacts and increase its operating efficiency. This site provides information and resources related to an EMS for small businesses and private industry, as well as local, state and federal agencies.

An Environmental Management System (EMS) is a framework that helps an organization achieves its environmental goals through consistent review, evaluation, and improvement of its environmental performance. The assumption is that this consistent review and evaluation will identify opportunities for improving and implementing the environmental performance of the organization. The EMS itself does not dictate a level of environmental performance that must be achieved; each organization's EMS is tailored to its own individual objectives and targets. An EMS helps an organization address its regulatory demands in a systematic and cost-effective manner. This proactive approach can help reduce the risk of non-compliance and improve health and safety practices for employees and the public. An EMS can also help address non-regulated issues, such as energy conservation, and can promote stronger operational control and employee stewardship. Basic Elements of an EMS include the following:

- Reviewing the organization's environmental goals;
- Analyzing its environmental impacts and legal requirements (or compliance obligations);
- Setting environmental objectives and targets to reduce environmental impacts and comply with legal requirements (or compliance obligations);

- Establishing programs to meet these objectives and targets;
- Monitoring and measuring progress in achieving the objectives;
- Ensuring employees' environmental awareness and competence; and,
- Reviewing progress of the EMS and making improvements.

Features and Goals of an EMS

- An Environmental Management System screens environmental execution, like the way a money related administration framework screens use and salary and empowers consistent checks of an organization's monetary execution.
- An EMS incorporates environmental administration into an organization's every day operations, long term practices, and other quality administration frameworks.
- To create an EMS, an association needs to evaluate its environmental effects, set goals to help diminish these effects, and arrange how to accomplish the targets
- Obligations and reporting structure, both of which need to be dispensed to staff and administration to guarantee the EMS is actualized viably.
- An environmental impact is recognizable proof and documentation of the real and potential environmental effects of an association's operations. This might be attained through undertaking an environmental review.
- An environmental review structures the premise of deciding an association's environmental goals and targets. An association can find a number of benefits by doing regular environmental reviews and by constantly changing how they are doing things.

- Training, where the staff will be able to become acquainted with their obligations that are related executing the EMS and with the general environmental arrangement and destinations of the association. This gives staff the important expertise and inspiration for the successful usage of the EMS.
- Documentation is important for everything that you are doing as part of your EMS. Everything ought to be reported alongside data that is showing the environmental impacts of the changes that the organization is making. Documentation is valuable for proving environmental changes to staff, investors, and other persons who play a role in the company in question.
- The most essential part of an Environmental Management System is hierarchical responsibility. For a successful EMS to be created and executed, you require cooperation from the CEO and all staff. Basically, it's to make sure that your company or organization is working as hard as they can to lessen their impact on the environment around them.
- Audits and monitoring, which are done by survey reviews. These should be executed on a regular basis in order to guarantee that the Environmental Management System is attaining its goals and to refine operational strategies to meet this objective. That being said, they can also help your organization to find where they may be falling off track.
- Operational and emergency procedures include all strategies that are going to be used in the process. These ought to be checked on to guarantee they are in line with the association's environmental destinations and targets. Any progressions ought to be incorporated with the documentation.

Benefits of Having an EMS

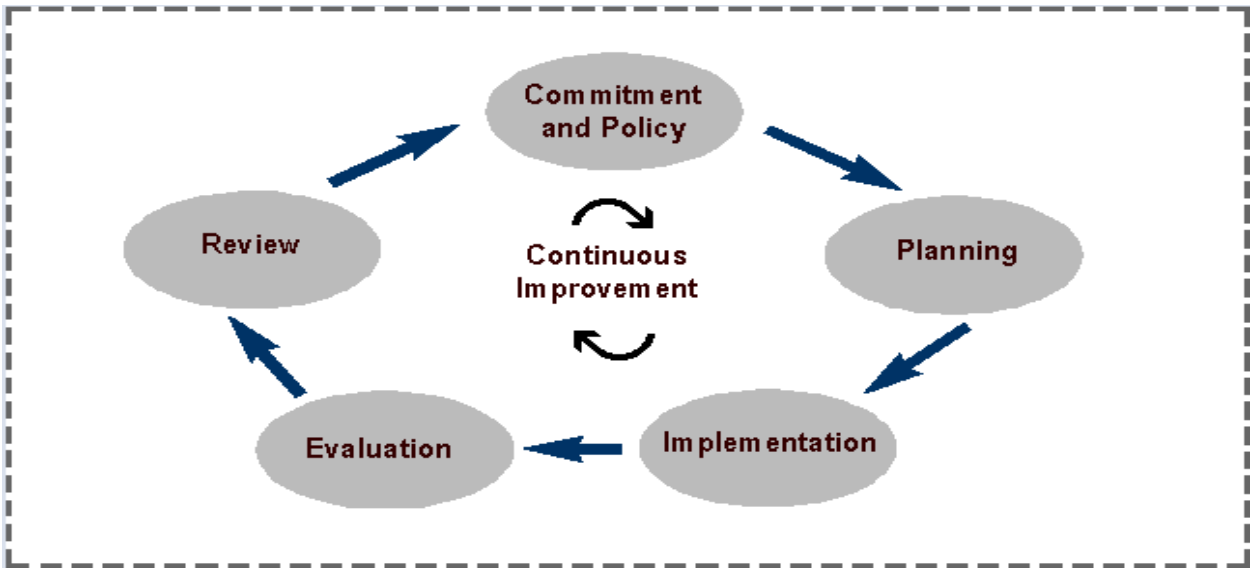
An EMS can help an organization in a number of different ways. Here are some of the most prominent benefits to having an EMS for your organization.

- Environmental Management Systems can help to minimize environmental effects of an organization or company.
- They can help to amplify the productive use of assets that the company has.

- They are shown to help to reduce the amount of waste that a company produces.
- EMS's can help to give the public a good picture of the organization that you have and that you want to be.
- They can play a very large role in constructing the consciousness of environmental concern among people within your organization and that utilize what your organization has to offer them.
- Gain a superior understanding of the environmental effects of business exercises.
- Expansion benefits and enhancement of environmental plan execution, through more productive operations.

Stages of EMS model

An ISO 14001 environmental management system is the most commonly used framework that help organizations to manage their environmental impacts. The framework developed by ISO 14001 encourages a company to continuously improve its environmental performance through commitment, planning, implementation, evaluation and review. By design, the system runs in a continuous improvement cycle.



Below are 5 main stages of an Environmental Management System as defined by the ISO 14001 standard

1. Environmental Policy: Top management of the company is committed to environmental compliance and continuous improvement and layouts the foundation of environmental policy.

2. Planning: The Company then identifies environmental aspects such as air and water pollution that can have negative effect on the lives of the people. It develops targets and programs to achieve them. It also delegates responsibilities, identifies schedules and presents a broad picture as to how it is going to achieve the defined objectives.

3. Implementation: This step involves implementation of the steps as laid down during the planning phase. The company identifies and completes training needs for all employees so as to make them aware of the company's environmental policies. Apart from this, it documents the EMS through policies, establishes document control and implements emergency preparedness and response.

4. Evaluation: A company monitors environmental interactions, performs internal audit of the EMS, evaluate whether targets are being met and establish a non-conformance and corrective action system.

5. Review: Senior management of the company reviews the environmental policies and objectives, EMS performance and suggests improvements. This stage helps management to identify the effectiveness of the EMS.

Advantages of environmental management systems

Most advantages of environmental management systems stem from savings your business can make, increased profitability and better sales opportunities:

- **Better regulatory compliance** - running an EMS will help ensure your environmental legal responsibilities are met and more easily managed on a day-to-day basis.

- **More effective use of resources** - you will have policies and procedures in place that help you manage waste and resources more effectively and reduce costs.
- **Marketing** - you can highlight your business' credentials as an environmentally aware operation that has made a commitment to continual environmental improvement through advertising or annual reporting.
- **Finance** - you may find it easier to raise investment from banks and other financial institutions, which are increasingly keen to see businesses controlling their environmental impact.
- **Increased sales opportunities** - large businesses and government departments may only deal with businesses that have an EMS.
- **Lighter regulation** - even if an EMS is not a regulatory requirement, by showing your commitment to environmental management, you may benefit through less frequent site visits or reduced fees from environmental regulators.
- **Certification to recognized standards** - gaining external certification of your EMS through ISO 14001, BS 8555 or EMAS can give your business credibility with customers and stakeholders.

Disadvantages of an environmental management system

Some disadvantages of environmental management systems can stem from cost and staff negativity:

- **Cost** - the costs involved can vary considerably, however you should be able to find low-cost opportunities that will produce significant cost savings and offset the cost of implementing and operating your EMS.
- **Time and resources** - an EMS should help your business to become more profitable by reducing energy consumption, waste and, therefore, costs, however it is an investment which requires you to commit time and resources.
- **Too burdensome** - some businesses may be able to realise the benefits of an EMS, eg resource efficiency and cost savings, without having to operate a full EMS - or an informal system may be a better fit for your business than working to a standard like ISO 14001.
- **Management or staff resistance** - an EMS can be seen as unnecessary, so you should explain the basic aims and benefits early on in the process,

eg through a presentation to the management board or through your business' communications.

- **Scope** - you can feel overwhelmed at the prospect of implementing an EMS across your business, however an EMS can be piloted within one part and later rolled out to other areas.
- **Training costs** - some members of staff will need to have a deep knowledge of the EMS. By using guidance or following the requirements of standards such as ISO 14001, an EMS can be implemented without the need for 'expert' training.