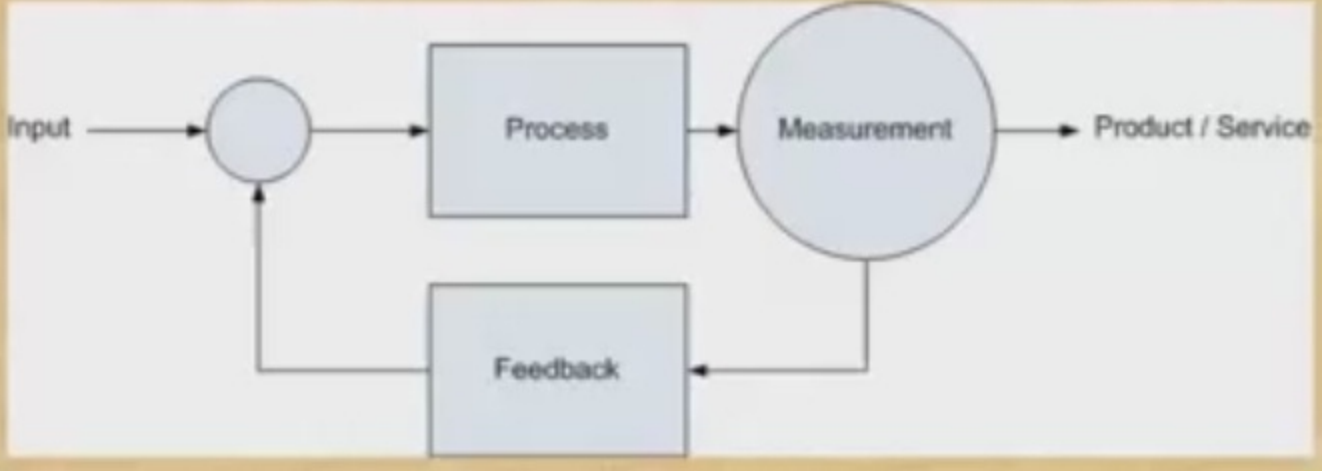
Business Processes

An ongoing set of related activities, the output of which results in value to:

1. An organization
2. Its business partners
3. Its customers

Business Process



Types of Business Processes

- Functional processes e.g., hiring employees, managing bills of materials, applying Internet use policy
- Cross functional processes e.g., procurement process

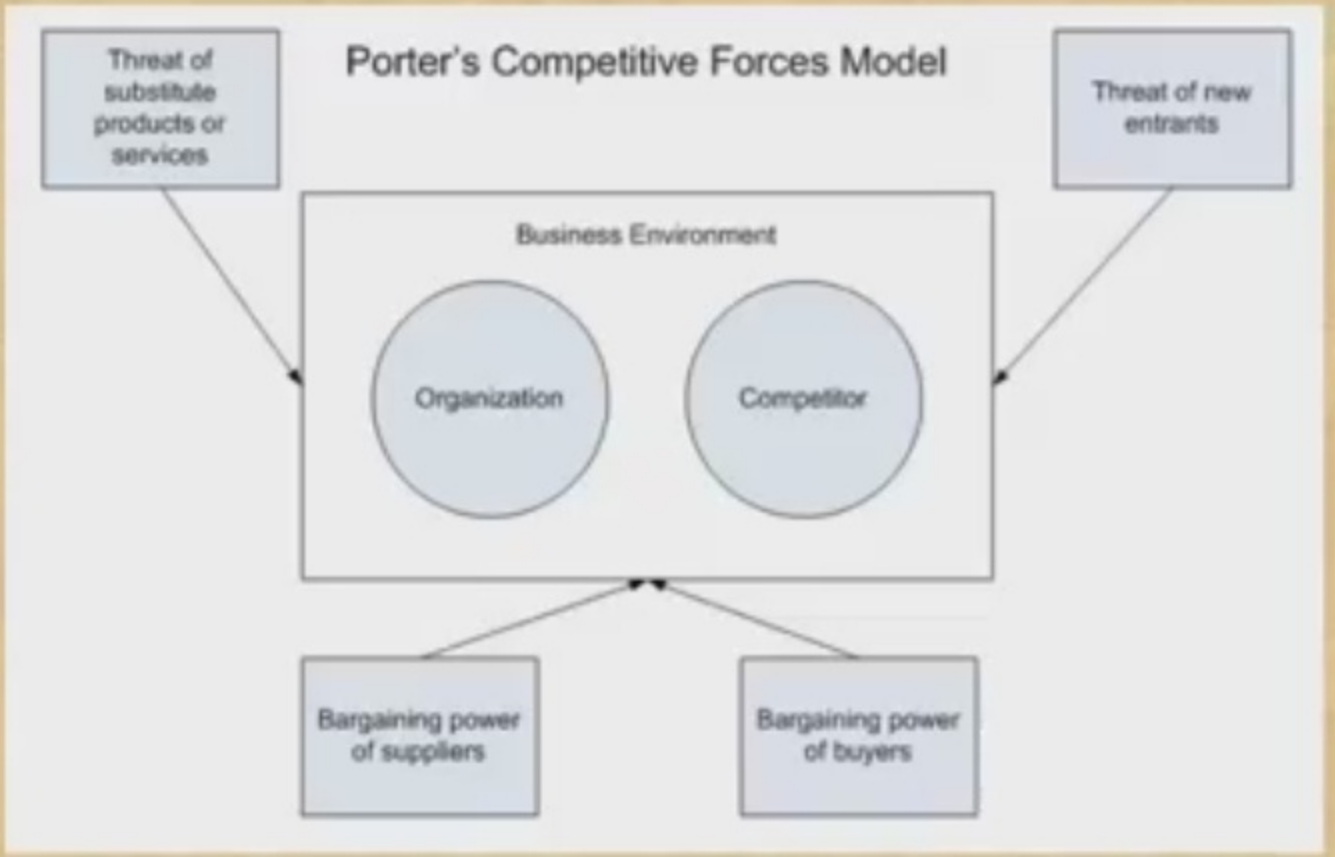
Business Process Reengineering

Redesigning of business processes to improve efficiency and effectiveness

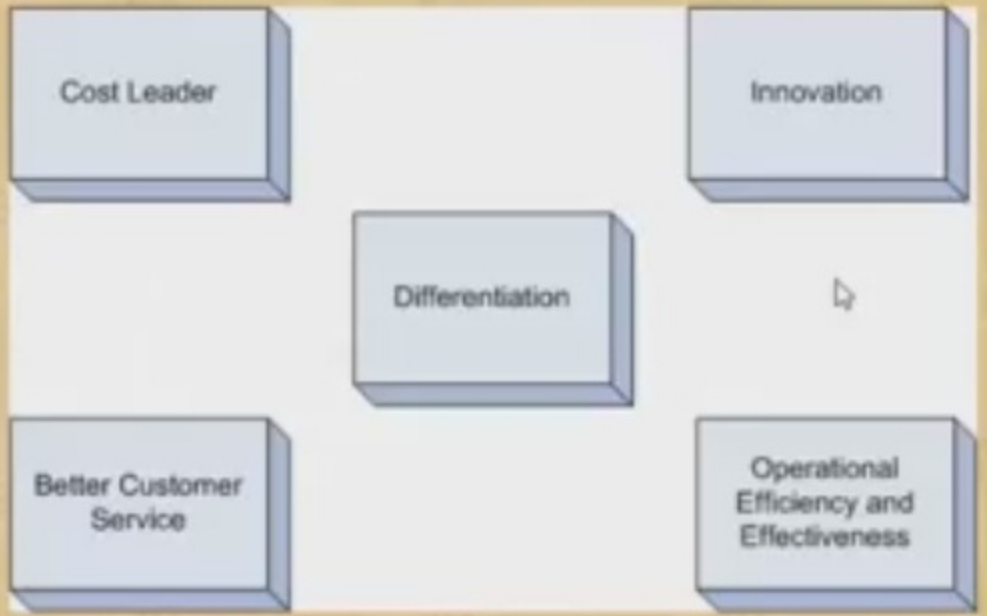
Business Process Management

Management technique to support the design, analysis, implementation, management , and optimization of business processes

Porter's Competitive Forces Model



Competitive Advantage Strategies



Characteristics of Business – IT Alignment

- IT is an engine of innovation
- Customer service receives paramount importance
- Business and IT professionals are rotated across departments and job functions
- Organizational goals are crystal clear to business and IT personnel
- IT personnel understand the functioning of the organization's revenue stream
- Organizational culture is vibrant and inclusive

Definition

"Business Process Management (BPM) is a disciplined approach to identify, design, execute, document, monitor, control, and measure both automated and non-automated business processes to achieve consistent, targeted results consistent with an organization's strategic goals. BPM involves the deliberate, collaborative and increasingly technology-aided definition, improvement, innovation, and management of end-to-end business processes that drive business results, create value, and enable an organization to meet its business objectives with more agility.“

- 2. MEANING "**A functional information system is a system that providesυ detailed information for a specific type of activity or related group of activities, as well as summarized information for management control of such activities".**
- 3. CHARACTERISITCS Many small changes in a large databaseυ Systematic records (mostly numerical)υ Routine actionsυ & updating Data preparation is a largeυ & important effort
- 4. EQUIPMENT REQUIREMENTS OF FUNCTIONAL INFORMATION SYSTEMS υ Large auxiliary storage υ Dual use files υ Moderate input/output requirements υ Flexible printing capacity υ Offline data entry υ Often difficult to define the problem υ Needs fast random access to large storage capacity υ Organization of computer storage is difficult υ Versatile inquiry stations desirable
- **5. FUNCTIONAL INFORMATION SYSTEM Information System for Marketing (MIS)υ Information System for HR Management (HRIS)υ Information System for Accountsυ (AIS) Information System for Productionυ & Manufacturing Information System for Finance Managementυ**

Functional Information System is based on the various business functions such as Production, Marketing, Finance and Personnel etc. These departments or functions are known as functional areas of business. Each functional area requires applications to perform all information processing related to the function. The popular functional areas of the business organization are:

(i) Financial Information System

(ii) Marketing Information System

(iii) Production/Marketing Information System

(iv) Human Resource Information System

Financial Information System:

Financial information system is a sub-system of organizational management information system. This sub-system supports the decision-making process of financial functions at the level of an organization.

Marketing Information System

This sub-system of management information system provides information about various functions of the marketing system of an organization. Marketing is another functional area of the business organization, which is engaged in marketing (selling) of its products to its customers.

Important functions of the marketing process include the following.

- The marketing identification function
- The purchase motivation function.
- The product adjustment function
- The physical distribution function
- The communication function
- The transaction function
- The post-transaction function

Production /manufacturing Information System

Manufacturing or production information system provides information on production /operation activities of an organization and thus facilitates the decision-making process of production managers of an organization. The main decisions to be taken in manufacturing system are:

- Product Design
-

Human Resources Information System

This functional information system supports the functions of human resource management of an organization. The human resource management function, in its narrow sense, it also known as personnel management .The function involves:

- Manpower planning.
- Staffing

- Training and development
- Performance evaluation, and
- Separation activities

The Organizational Process

Organizing, like planning, must be a carefully worked out and applied process. This process involves determining what work is needed to accomplish the goal, assigning those tasks to individuals, and arranging those individuals in a decision□making framework (organizational structure). The end result of the organizing process is an **organization** — a whole consisting of unified parts acting in harmony to execute tasks to achieve goals, both effectively and efficiently.

A properly implemented organizing process should result in a work environment where all team members are aware of their responsibilities. If the organizing process is not conducted well, the results may yield confusion, frustration, loss of efficiency, and limited effectiveness.

In general, the organizational process consists of five steps (a flowchart of these steps is shown in Figure 1):

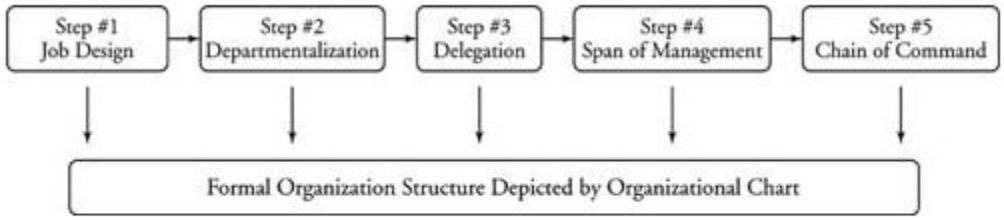


Figure 1 The organizational process.

1. **Review plans and objectives.**

Objectives are the specific activities that must be completed to achieve goals. Plans shape the activities needed to reach those goals. Managers must examine plans initially and continue to do so as plans change and new goals are developed.

2. **Determine the work activities necessary to accomplish objectives.**

Although this task may seem overwhelming to some managers, it doesn't need to be. Managers simply list and analyze all the tasks that need to be accomplished in order to reach organizational goals.

3.Classify and group the necessary work activities into manageable units.

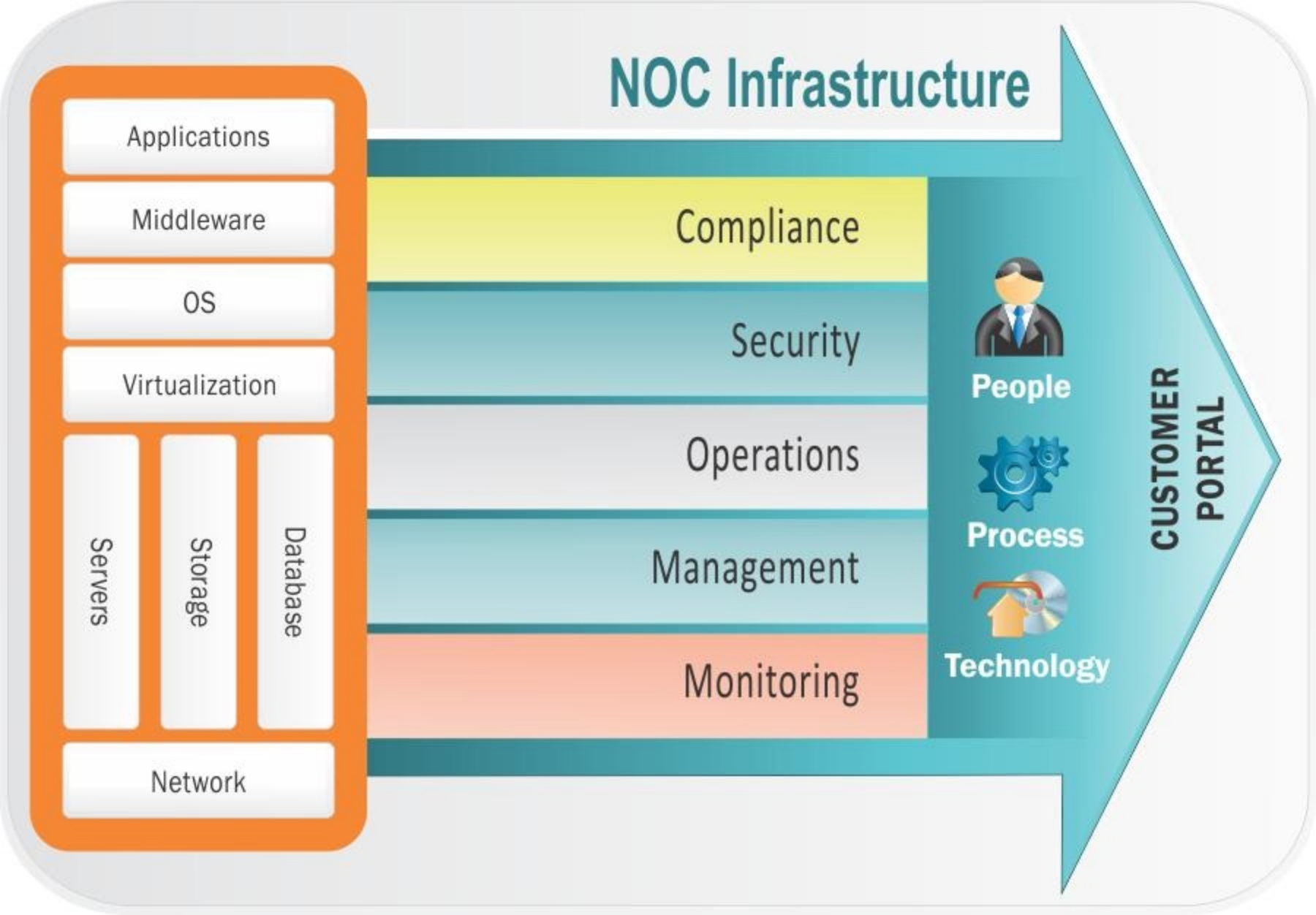
A manager can group activities based on four models of departmentalization: functional, geographical, product, and customer.

4.Assign activities and delegate authority.

Managers assign the defined work activities to specific individuals. Also, they give each individual the authority (right) to carry out the assigned tasks.

5.Design a hierarchy of relationships.

A manager should determine the vertical (decision□making) and horizontal (coordinating) relationships of the organization as a whole. Next, using the organizational chart, a manager should diagram the relationships.


NOC Infrastructure
Applications
Middleware
OS
Virtualization
Servers
Storage
Database
Network
Compliance
Security
Operations
Management
Monitoring
People
Process
Technology
CUSTOMER PORTAL

Comparison chart

	Data	Information
Meaning	Data is raw, unorganized facts that need to be processed. Data can be something simple and seemingly random and useless until it is organized.	When data is processed, organized, structured or presented in a given context so as to make it useful, it is called information.
Example	Each student's test score is one piece of data.	The average score of a class or of the entire school is information that can be derived from the given data.
Etymology	"Data" comes from a singular Latin word, datum, which originally meant "something given." Its early usage dates back to the 1600s. Over time "data" has become the plural of datum.	"Information" is an older word that dates back to the 1300s and has Old French and Middle English origins. It has always referred to "the act of informing, " usually in regard to education, instruction, or other knowledge communication.

Six reasons why information systems are so important for business today include:

1. Operational excellence
2. New products, services, and business models
3. Customer and supplier intimacy
4. Improved decision making
5. Competitive advantage
6. Survival

Here is on other answer to this question The emergence of a global economy, transformation of industrial economies, transformation of the business enterprise, and the emergence of digital firm make information systems essential in business today. Information system is a foundation for conducting business today. In many businesses, survival and the ability to achieve strategic business goals is difficult without extensive use of information technology. There are six reasons or objectives why businesses use information system:

1. Operational excellence. Business improve the efficiency of their operations in order to achieve higher profitability. Information systems are important tools available to managers for achieving higher levels of efficiency and productivity in business operations. A good example is Wal-Mart that uses a RetailLink system , which digitally links its suppliers to every one of Wal-Mart's stores. as soon as a customer purchase an item , the supplier is monitoring the item , knows to ship a replacement to the shelf.

2. New products, services, and business models. Information system is a major tool for firms to create new products and services, and also an entirely new business models. A business model describe how a company produces, delivers, and sells a product or service to create wealth.

Example: Apple inc transformed an old business model based on its iPod technology platform that included iPod, the iTunes music service, and the iPhone.

3. Customer/supplier intimacy. When a business serves its customers well, the customers generally respond by returning and purchasing more. this raises revenue and profits. The more a business engage its suppliers, the better the suppliers can provide vital inputs. This lower costs. Example: The Mandarin Oriental in manhattan and other high-end hotels exemplify the use of information systems and technology to achieve customer intimacy. they use computers to keep track of guests' preferences, such as their preffered room temperature, check-in time, television programs.

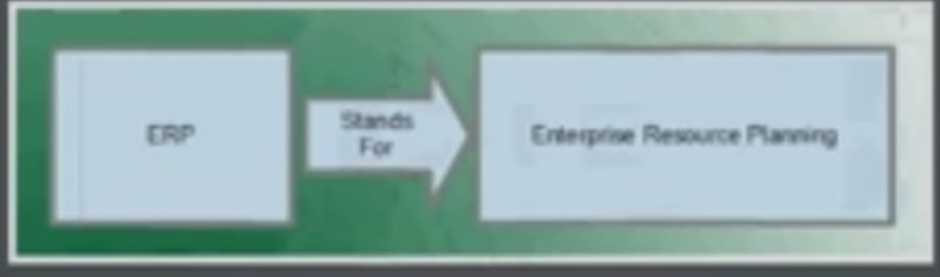
4. Improved decision making. Many managers operate in an information bank, never having the right information at the right

time to make an informed decision. These poor outcomes raise costs and lose customers. Information system made it possible for the managers to use real time data from the marketplace when making decision. Example: Verizon Corporation uses a Web-based digital dashboard to provide managers with precise real -time information on customer complains, network performance.. Using this information managers can immediately allocate repair resources to affected areas, inform customers of repair efforts and restore service fast.
5. Competitive advantage. When firms achieve one or more of these business objectives(operational excellence, new products, services, and business models, customer/supplier intimacy, and improved decision making) chances are they have already achieved a competitive advantage. Doing things better than your competitors, charging less for superior products, and responding to customers and suppliers in real time all add up to higher sales, and higher profits. Example: Toyota Production System focuses on organizing work to eliminate waste, making continues improvements, TPS is based on what customers have actually ordered.
6. Day to day survival. Business firms invest in information system and technology because they are necessities of doing business. This necessities are driven by industry level changes. Example: Citibank introduced the first automatic teller machine to attract customers through higher service levels, and its competitors rushed to provide ATM's to their customers to keep up with Citibank. providing ATMs services to retail banking customers is simply a requirement of being in and surviving in the retail banking business. Firm turn to information system and technology to provide the capability to respond to these.

Information systems are the foundation for conducting business today. In many industries, survival and even existence without extensive use of IT is inconceivable, and IT plays a critical role in increasing productivity. Although information technology has become more of a commodity, when coupled with complementary changes in organization and management, it can provide the foundation for new products, services, and ways of conducting business that provide firms with a strategic advantage.

THE TERM ERP

The term "ERP" stands for "Enterprise Resource Planning".

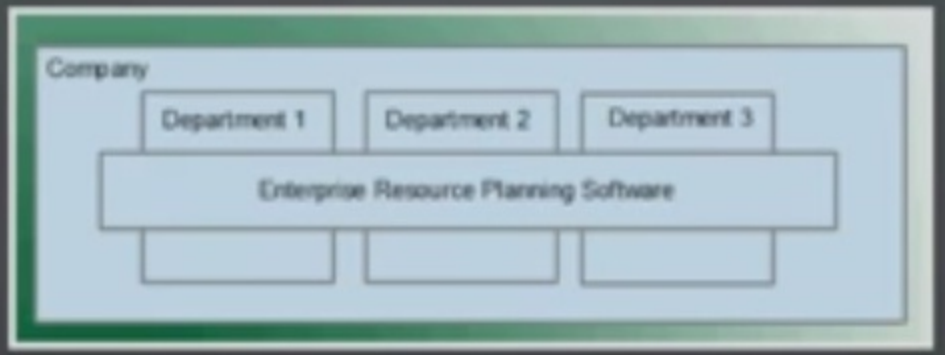


TYPE OF SOFTWARE

ERP is not a name of any software, instead it is a class (or type) of software.

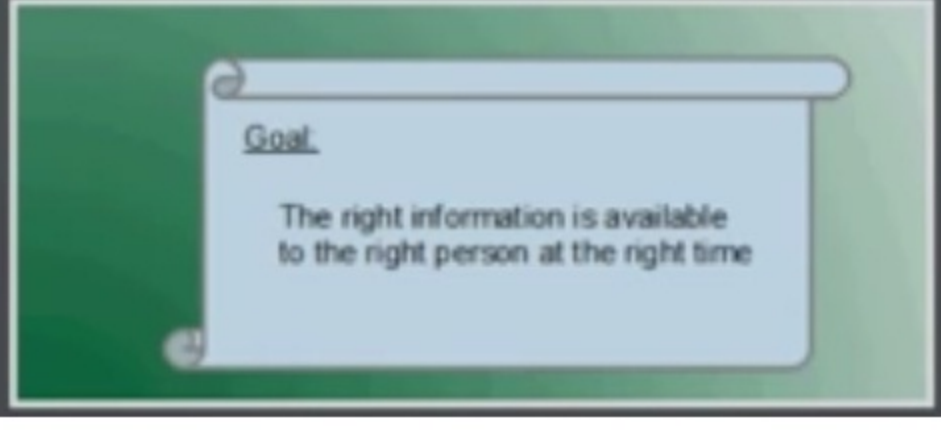
FUNCTIONALITY

An ERP software provides an end to end information management solution for a company. The software could be used by all departments of the company to manage the information.



OBJECTIVE

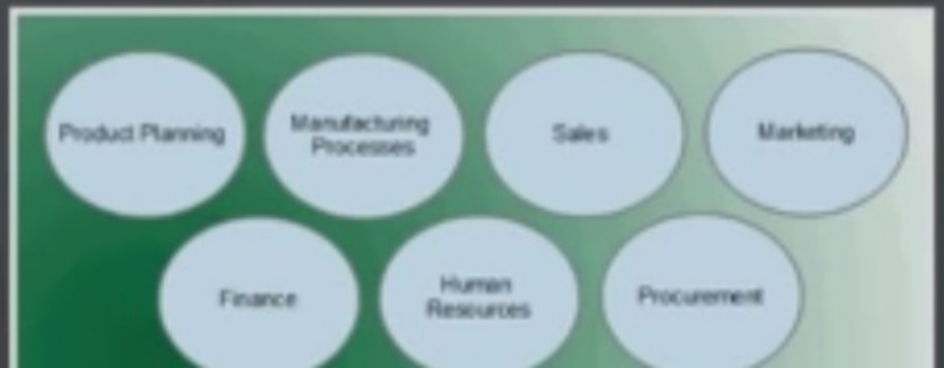
The goal is that right information is available to the right person at the right time.



BUSINESS AREAS

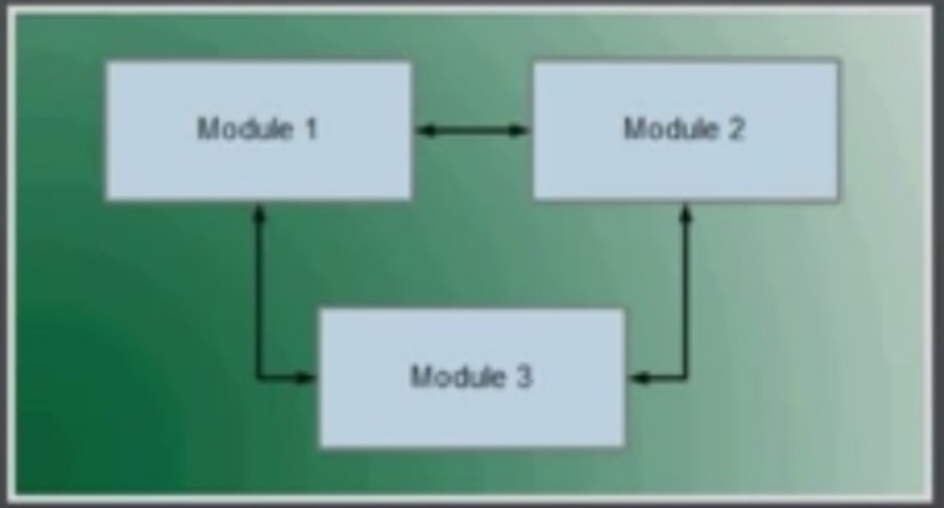
ERP software integrates all areas of operations including:

- Product Planning
- Manufacturing Processes
- Sales
- Marketing
- Finance
- Human Resources
- Procurement



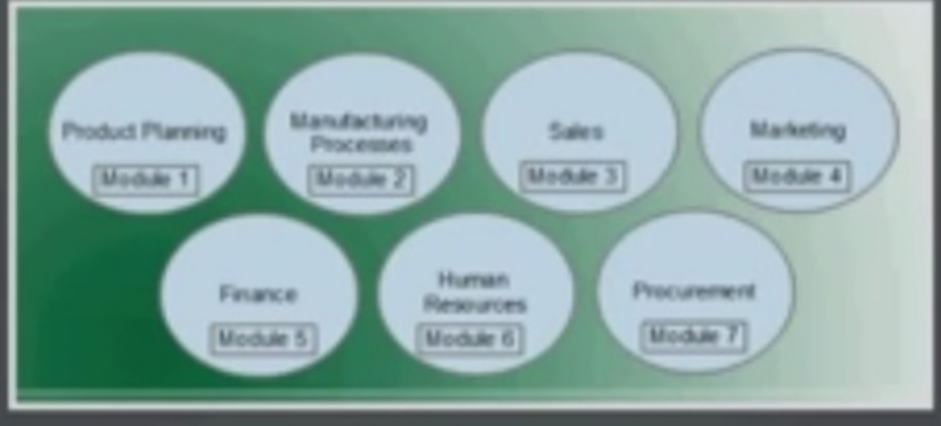
MODULAR AND INTEGRATED

An ERP software is typically modular but integrated. Meaning it consists of multiple modules that are connected to each other.



FOCUS OF A MODULE

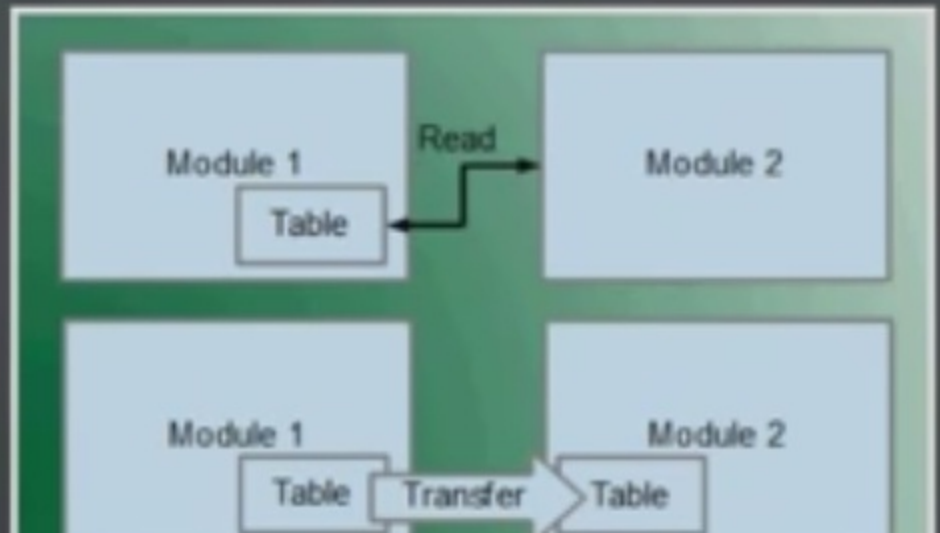
Each module is focused on one area of business processes e.g. finance, human resources etc.



COMMUNICATION AMONG MODULES

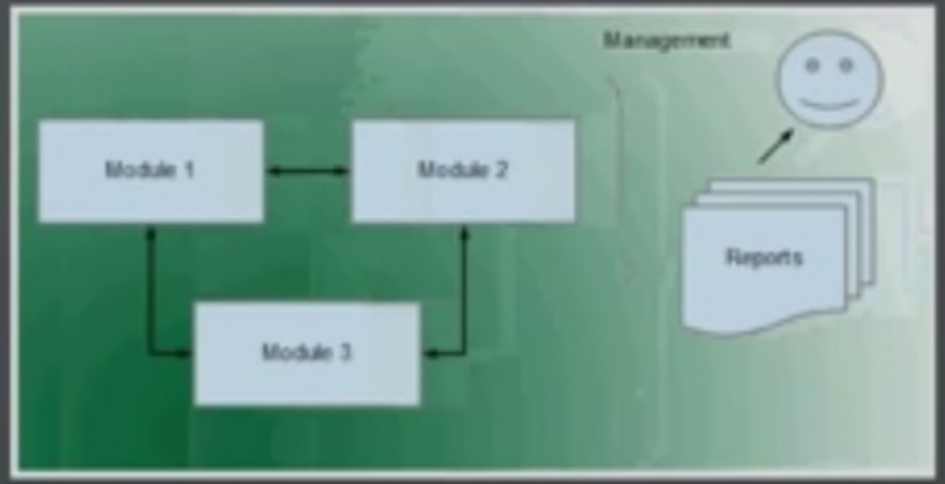
When we say modules are integratred that means:

- A module could share information stored in another modules e.g. list of suppliers etc.
- Also information could flow from one module to the other e.g. accounting entries etc.



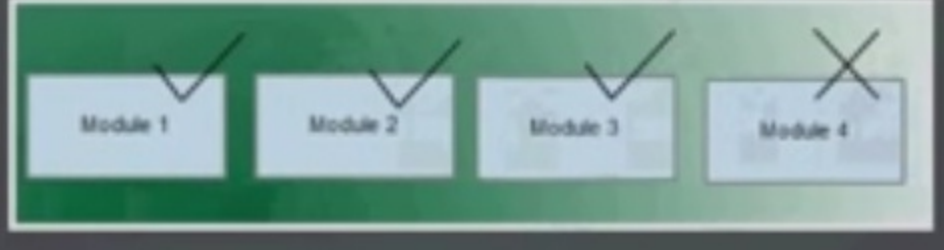
MANAGEMENT REPORTING

Since modules are connected, management of a company could run reports on any aspects of the business to get a complete view of activities. Reports help executives make strategic decisions.



LICENSING

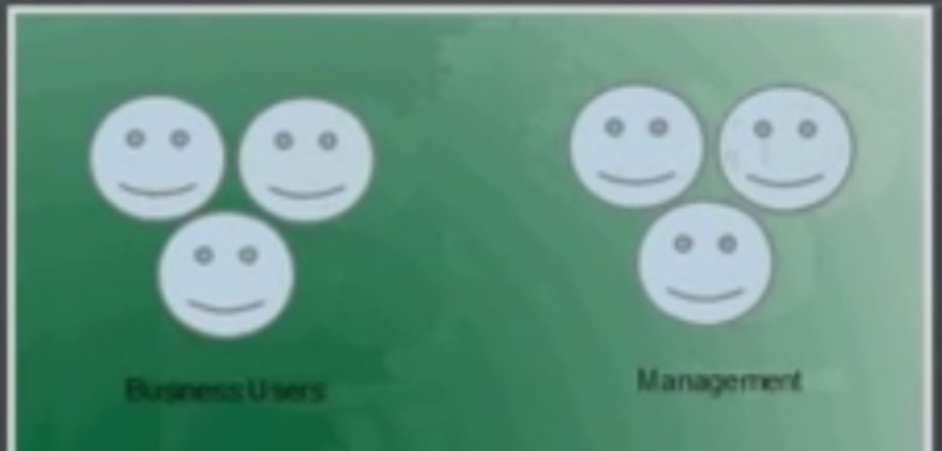
Modules could be individually purchased based on what best meets the specific needs and technical capabilities of the company.



TYPES OF USERS

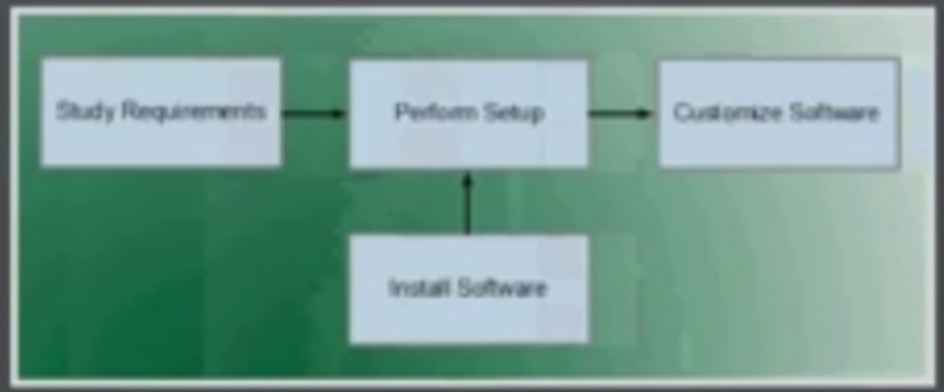
The end-users of ERP software could be divided into these groups:

- Business users: Performs day to day operations e.g. data entry, operational reports etc
- Management or executives: Run reports and perform inquiries that would help them in decision making



IMPLEMENTATION

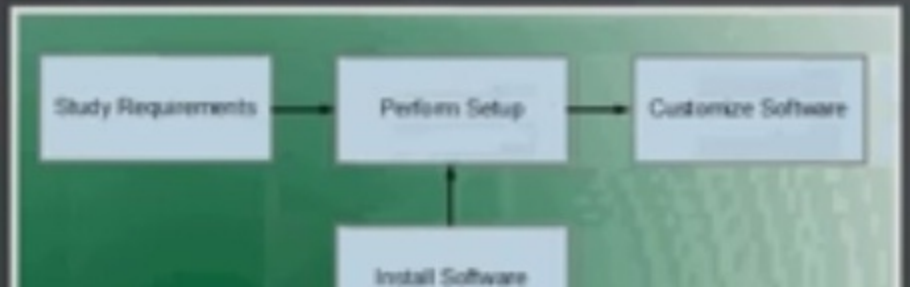
Term "implementation" is used to make the ERP software ready to be used by the company.



IMPLEMENTATION PROCESS

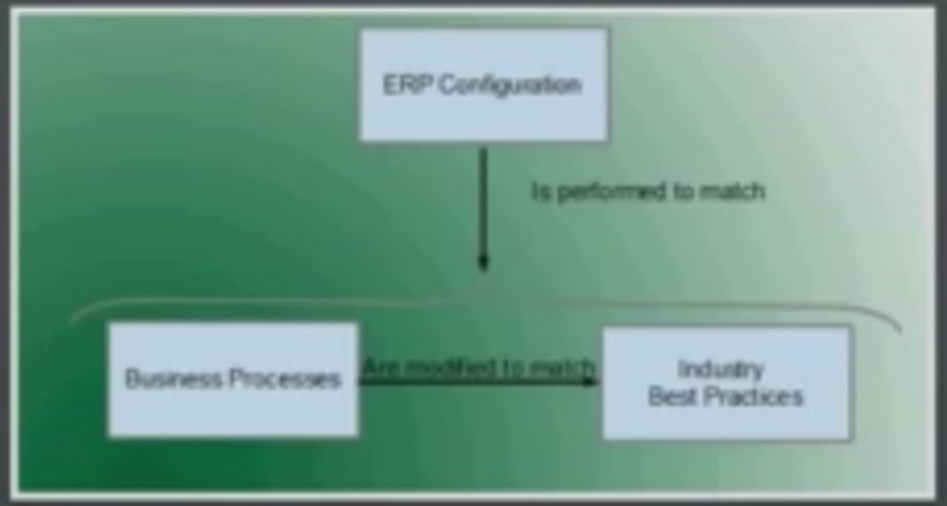
The process involves:

- Study the business requirements. Find out how the ERP system should be behaving.
- Setup or configure the software such that it starts working as per business requirements. By this time the software must be installed and available for setup.
- Fill the gaps between business requirements and the functionality offered by ERP software.



INDUSTRY BEST PRACTICES

The software is configured to honor company's current business processes. However the company also alters processes where necessary, to bring them align to industry best pratices. Companies do take the implementation of ERP as an opportunity to streamline their business process.



ROLES IN A PROJECT

Various roles play part in a typical ERP project. A role may be filled by one or more people depending on the needs. Sometimes one person may be given more than one roles.

ROLES EXAMPLES

Here are important roles:

- Network Administrator (Usually 1)
- Operating System Administrator (Usually 1)
- Database Administrator (Usually a team)
- ERP System Administrator (Usually 1)

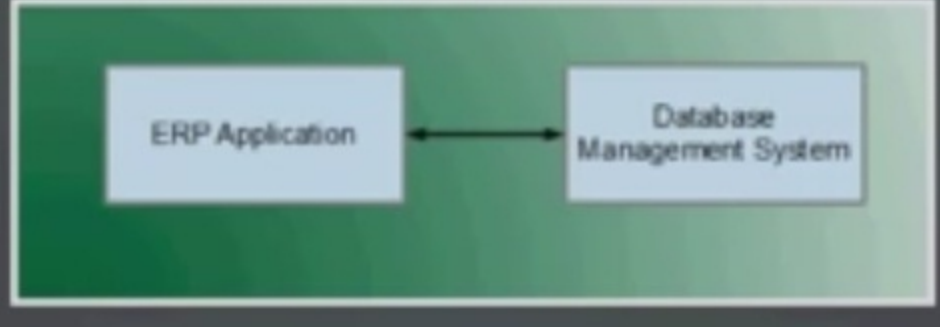
ROLES EXAMPLES

... Continued

- Project Manager (Usually 1)
- Functional Consultant (Usually a team)
- Technical Consultant (Usually a team)
- Business Analyst (Usually 1 per functional area)

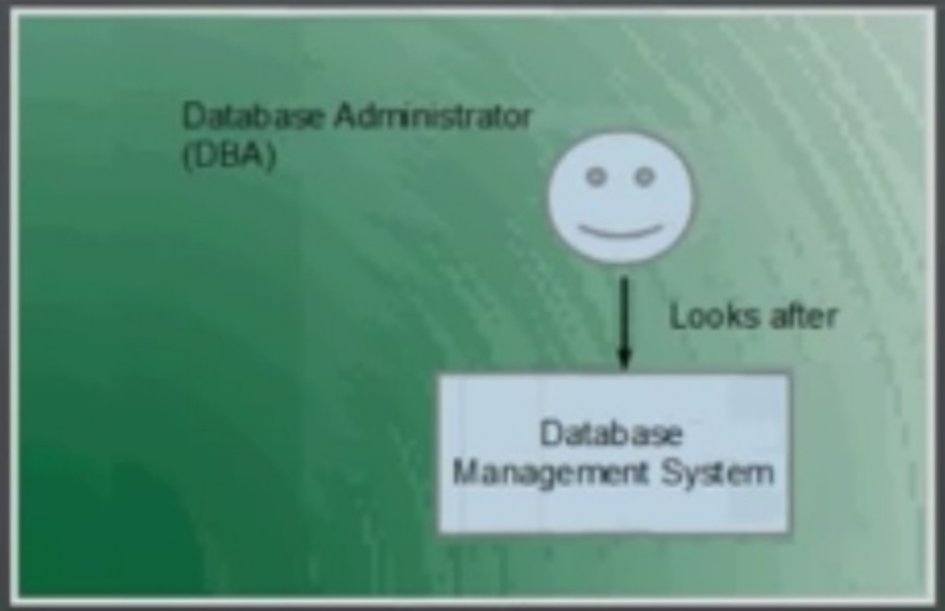
DATABASE MANAGEMENT SYSTEM

ERP software connects to a database software at the back end.
The data is managed in the database.



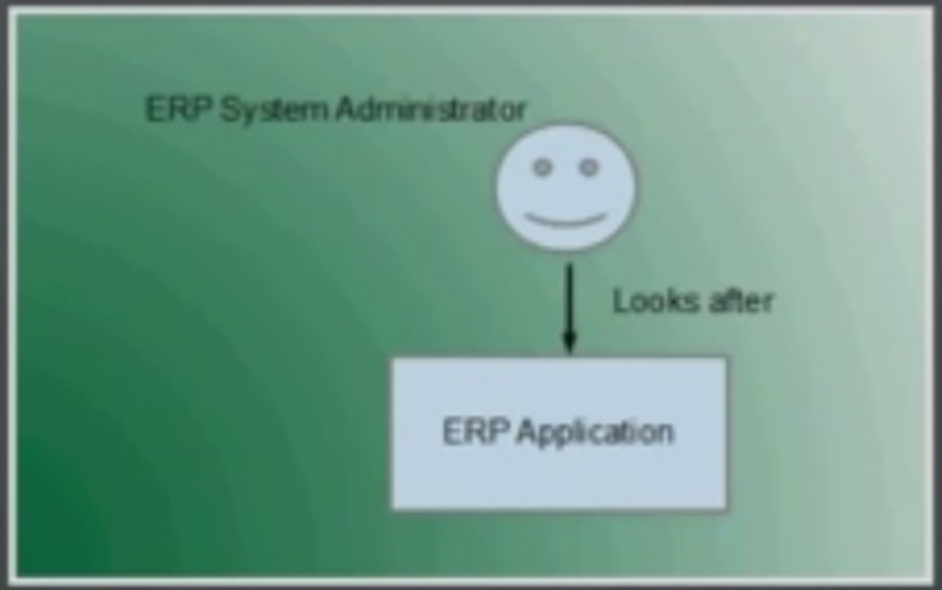
DATABASE ADMINISTRATOR

Database Administrator also known as DBA is the person who looks after the health of the database. He also performs installation of ERP software.



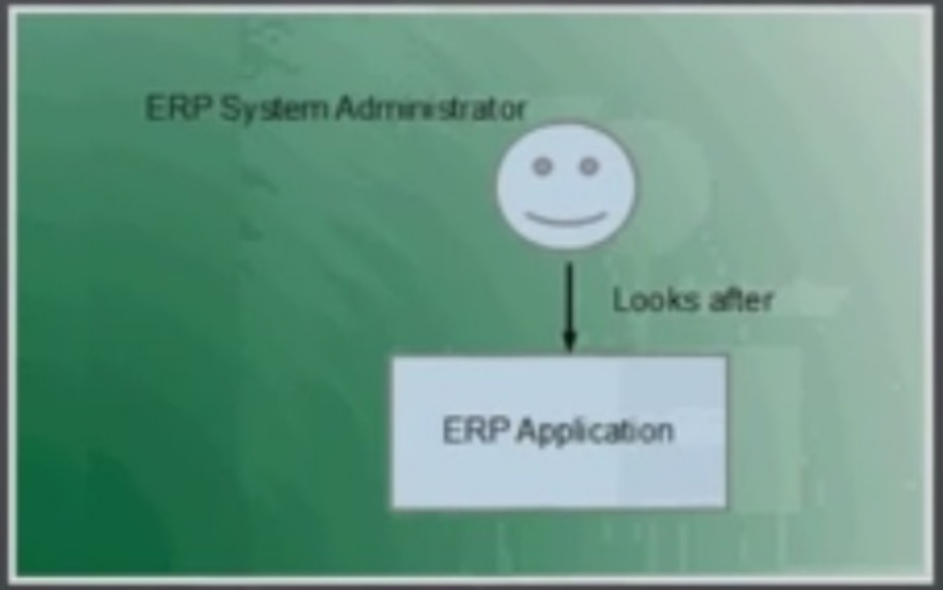
ERP SYSTEM ADMINISTRATOR

ERP Sytem Administrator is the person who looks after the health of the ERP software.



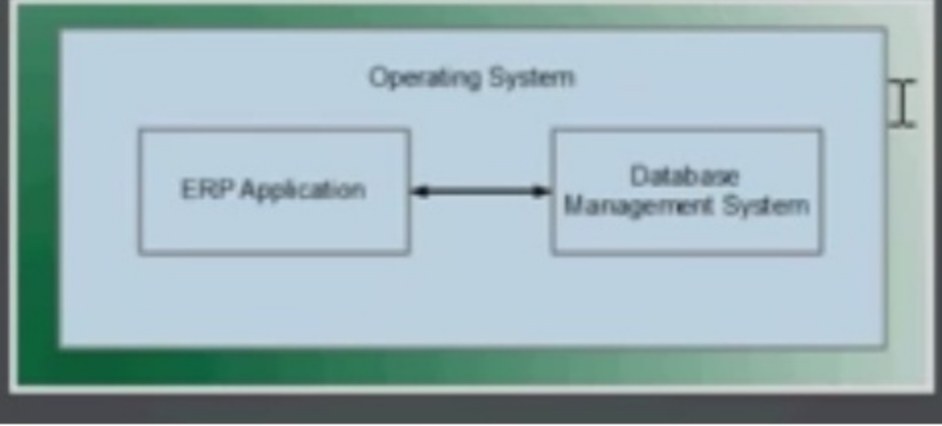
ERP SYSTEM ADMINISTRATOR

ERP Sytem Administrator is the person who looks after the health of the ERP software.



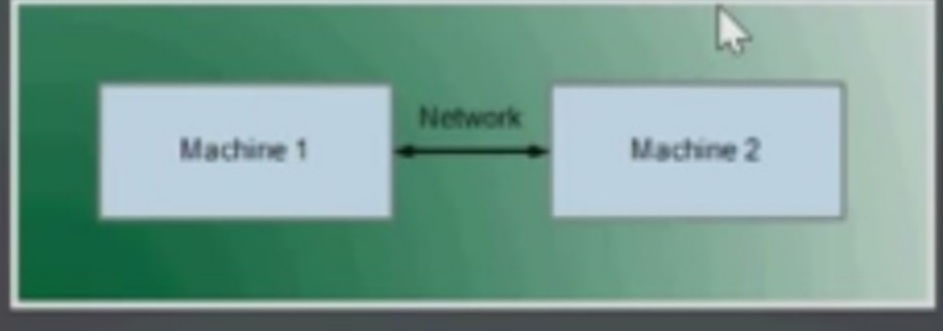
OPERATING SYSTEM

Both database and ERP software runs on an operating system like Linux, Unix, or Windows.



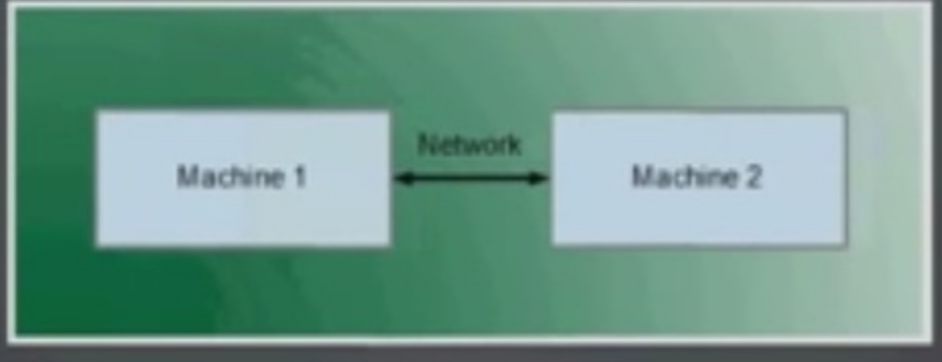
OPERATING SYSTEM ADMINISTRATOR

Operating System Administrator is the person who looks after the health of the operating system.



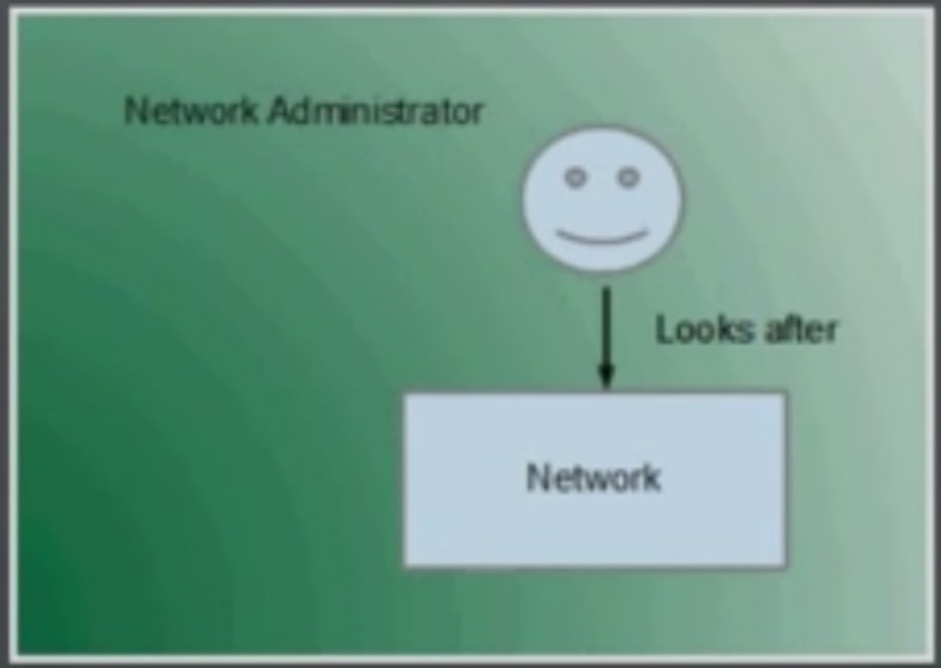
NETWORK

Network connects all the machines together in a system.



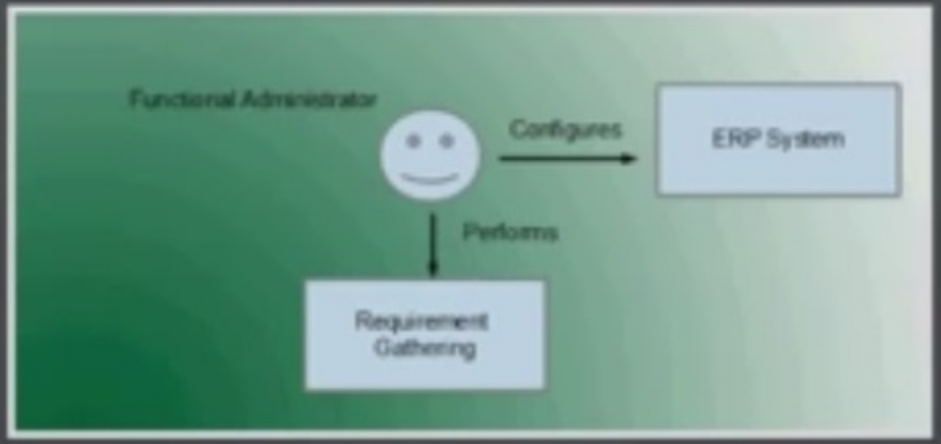
NETWORK ADMINISTRATOR

Network Administrator is the person who looks after the health of the network connecting all the computers together.



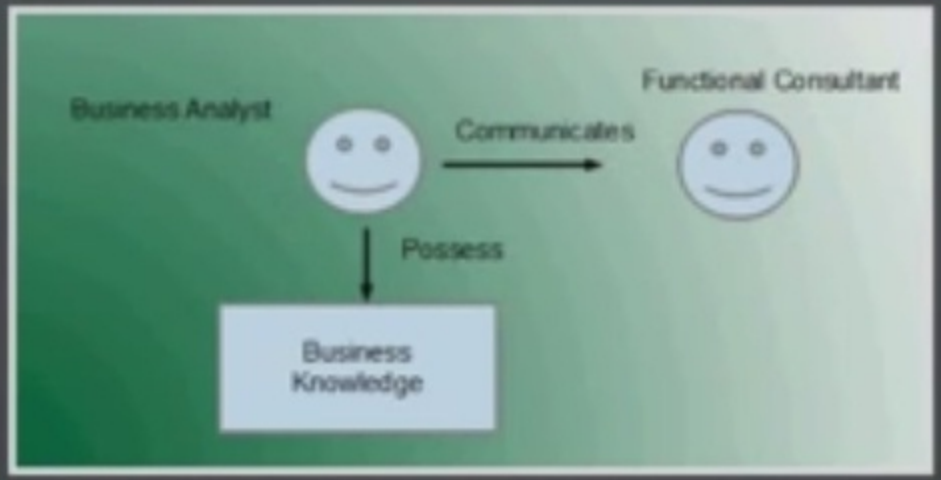
FUNCTIONAL CONSULTANT

Functional Consultant gathers the business requirements and performs ERP setup accordingly.



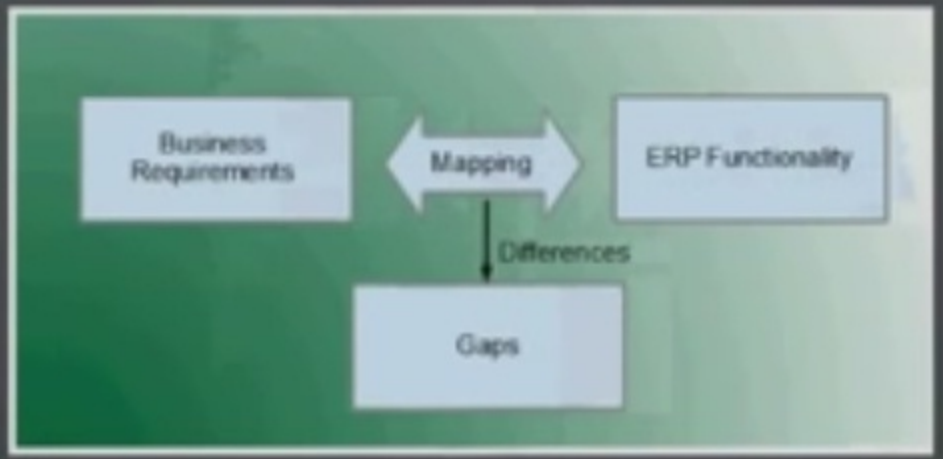
BUSINESS ANALYST

Business Analyst is the person who is an expert of business knowledge. He is in touch with the business users and verifies that the requirements clear to functional consultants.



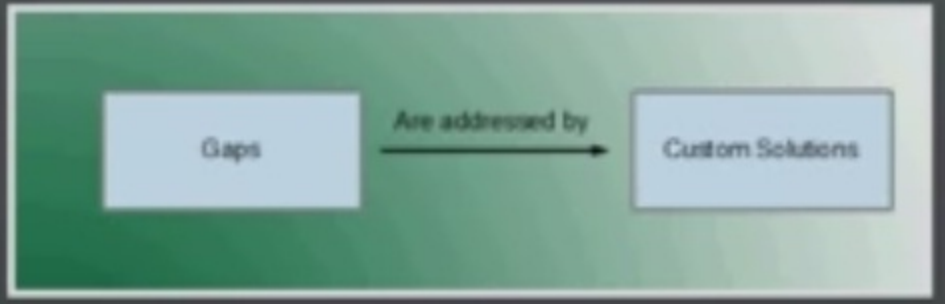
FUNCTIONAL GAPS

In almost all the cases some business requirements are so unique that the ERP system has no built-in functionality to handle those unique cases. The term "Gap" is used for such business requirements.



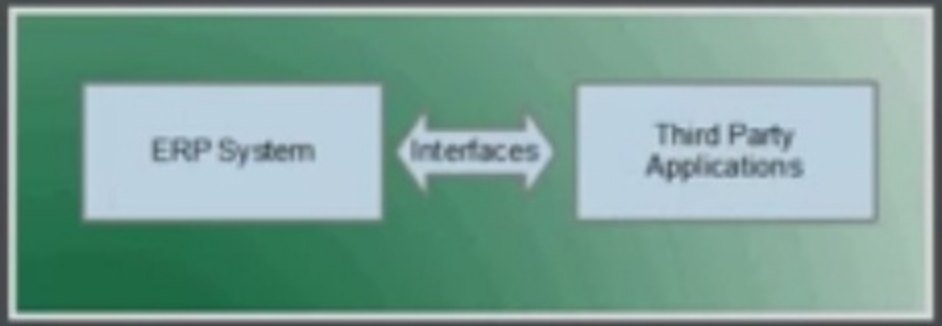
CUSTOMIZATIONS

This is where technical consultants comes in. They modify the software by going under the hood and add the missing functionality e.g. new reports are created in the system that were needed by the business. This step is called customization or extension.



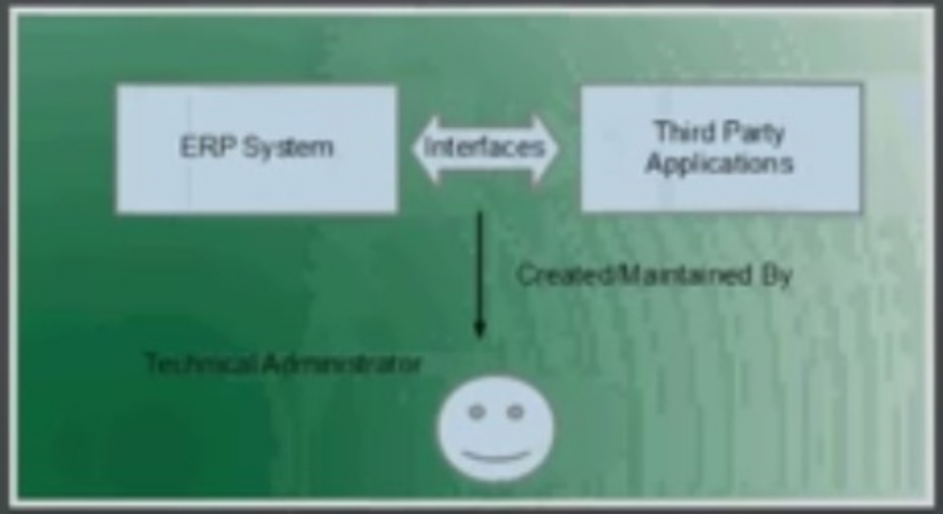
COMMUNICATION AMONG APPLICATIONS

In most cases ERP system talks to other third party system running witin the same company or in an external company e.g. suppliers and customers.



INTERFACES

Technical consultants assist in writing programs that help communicate information back and forth between the ERP software and the third party software either within the company or oustide it. Programs that aids communication between two software is called "interface".

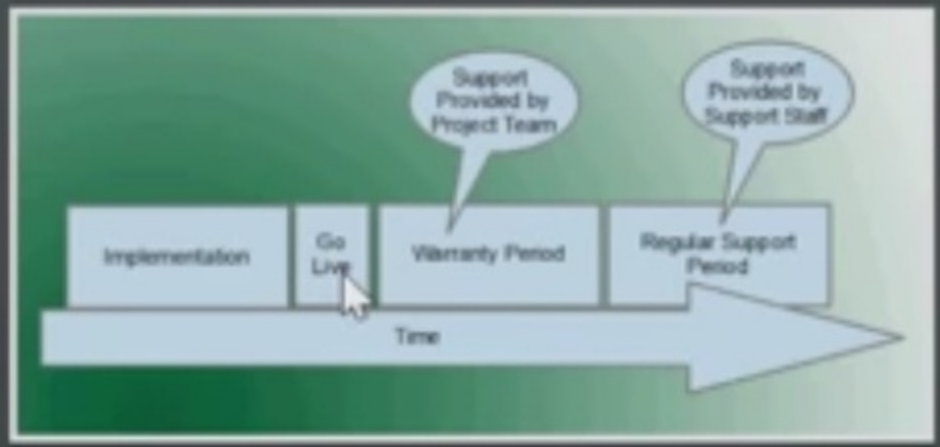


PROJECT MANAGER

Project manager is the person who is managing the project. All other team members report to the project manager during the project. Most members also report to their regular bosses as well. For example, a database administrators will be reporting to the manager or director of the IT department as well as to the project manager during the life of the project.

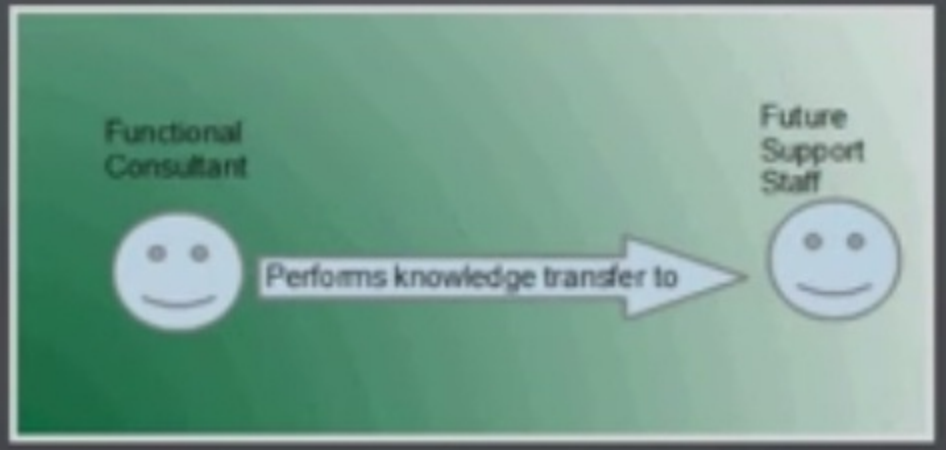
WARRANTY AND SUPPORT PERIODS

After the go-live, warranty period begins. Any problems that come up will be handled by the implemention team. After that the support role will be transferred to another team, usually permanent staffs or a third party company specialized in support.



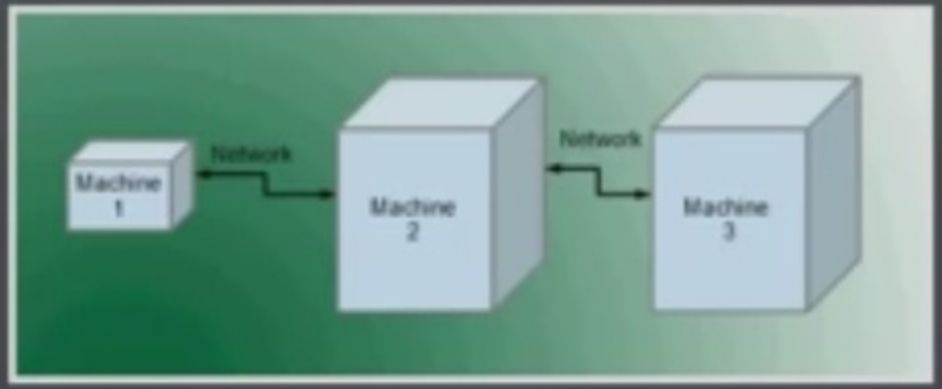
TRAINING

Consultants would provide training to the new person or team who will be providing support.



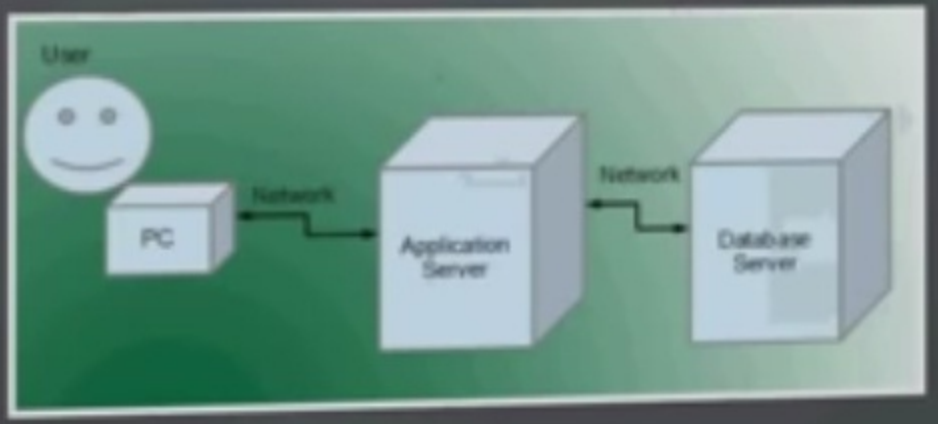
MULTIPLE SERVERS

Usually there are few computers, called servers, that are connected and work together to produce workable environment for ERP systems.



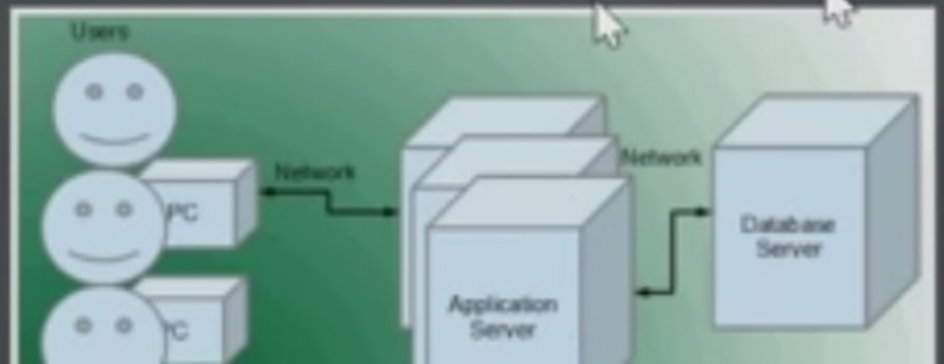
THREE TIER ENVIRONMENT

One computer hosts the application (the actual ERP software and another one hosts the database. Users connect to the computer running ERP System through their browsers. This called a three tier environment.



LOAD BALANCING

In an environment were numerious users connects, there could be even multiple application servers installed, communicating with the same database server. This way the load is shared among various machines. The term used for this setup is "Load Balancing".



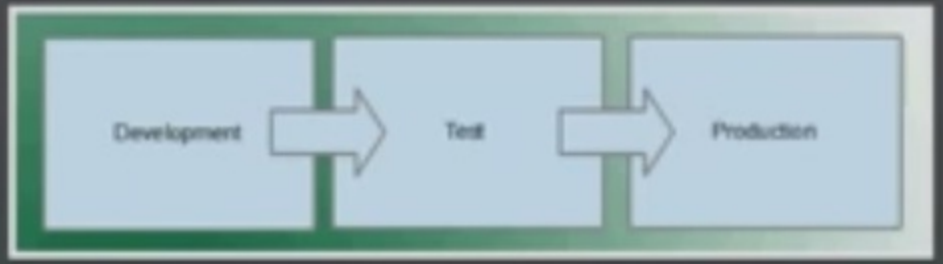
ENVIRONMENTS

Companies running ERP systems usually keep three sets of environments:

- Development
- Test
- Production

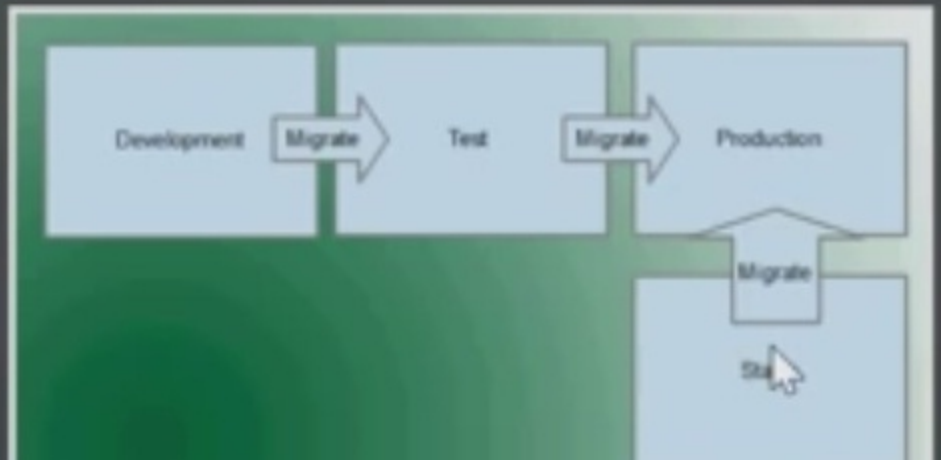
TRANSPORTING SETUP

The configuration is performed in the development environment first by the team. The setup is copied over to the Test environment where users perform their testing. Once users are happy the setup is copied to the production (Go-live), where the system is actually used to manage day to day operations of the company. The term used for copying configuration from one environment to the other is "Transport".



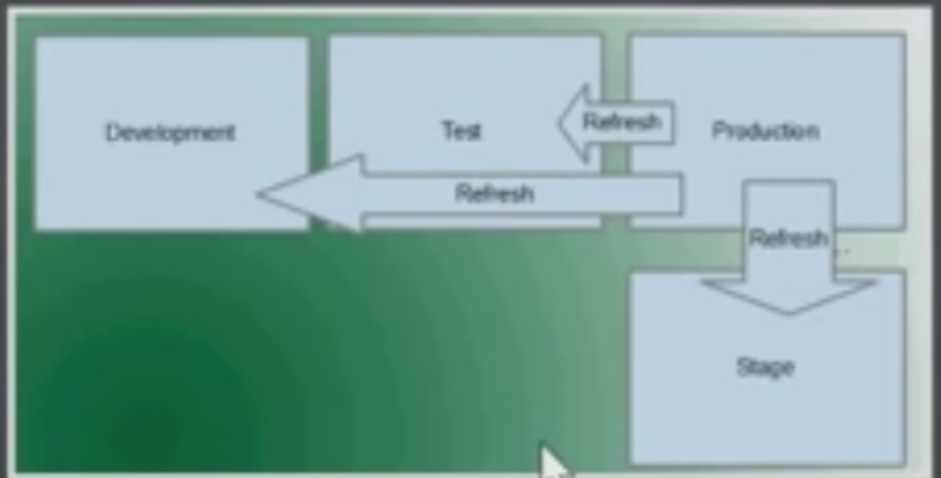
STAGE ENVIRONMENT

In some comapnies few other environments are also maintained e.g. "Stage" where troubleshooting is performend, and bug fixes/patches are applied and tested first before moving them to production.



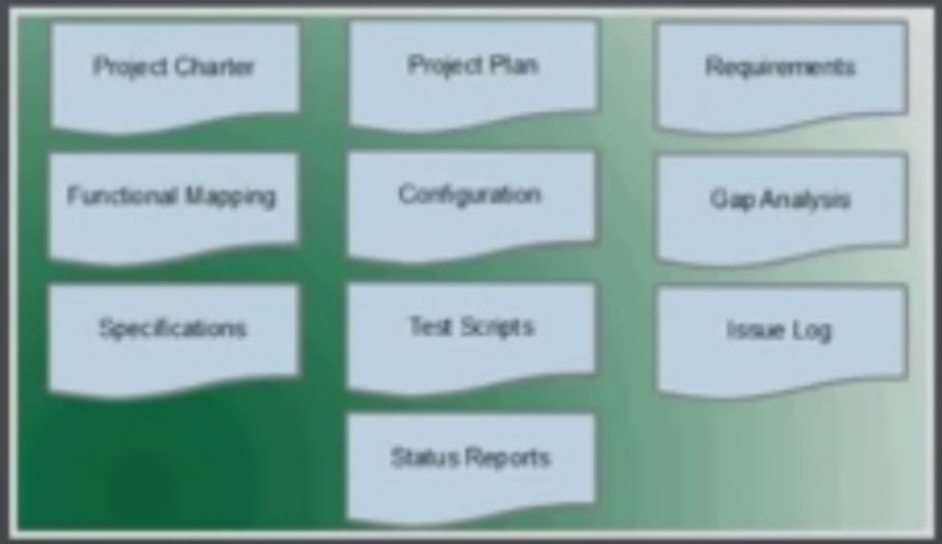
REFRESH

All environments are periodically refreshed with recent production data.



PROJECT DOCUMENTATIONS

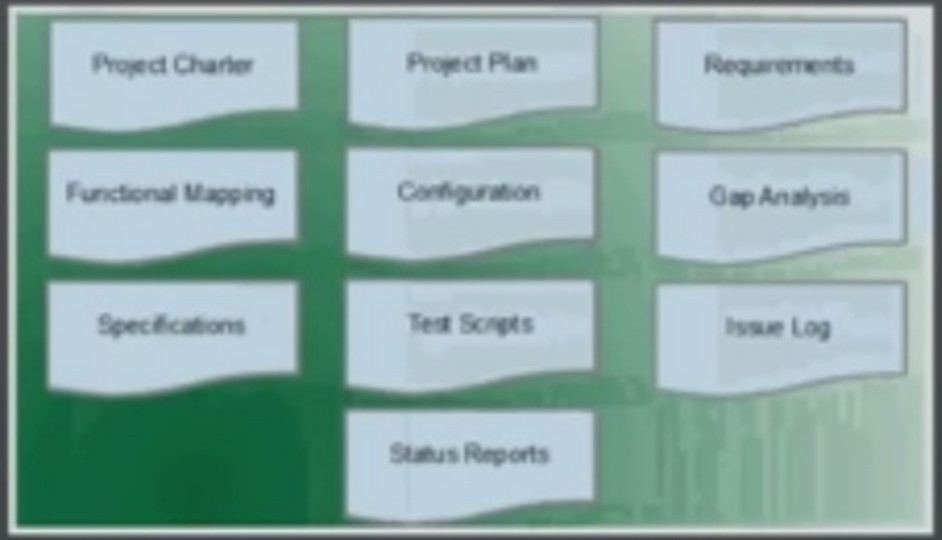
Documents are created through the project and are stored in the central place for the project.



EXAMPLES OF DOCUMENTS

Some examples are:

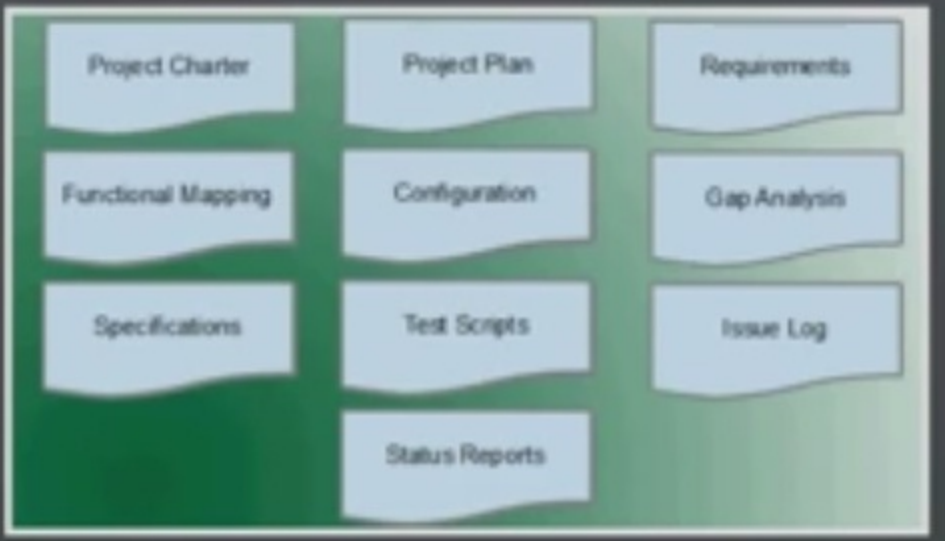
- Project Charter by Project Manager
- Project Plan by Project Manager
- Requirement Gathering document by Functional Consultant



EXAMPLES OF DOCUMENTS

... Continued

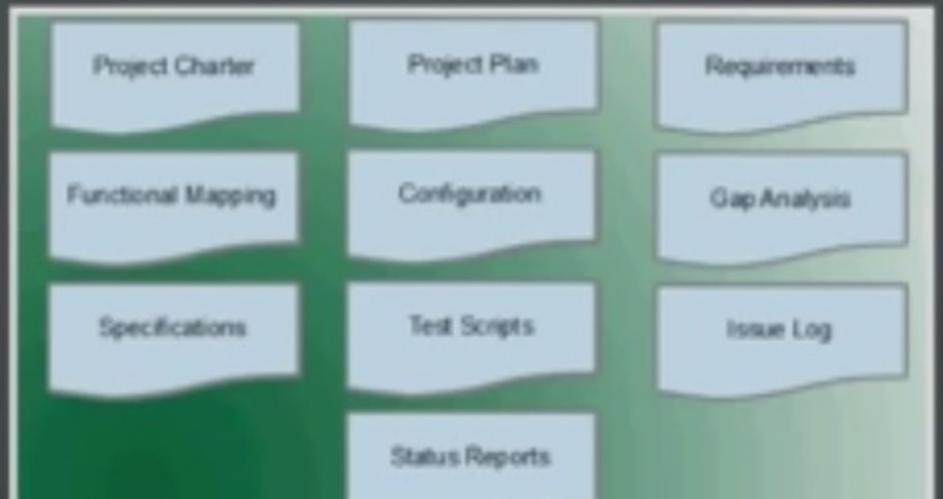
- Functional Mapping by Functional Consultant
- Configuration document by Functional Consultant
- Gap Analysis document by Functional Consultant



EXAMPLES OF DOCUMENTS

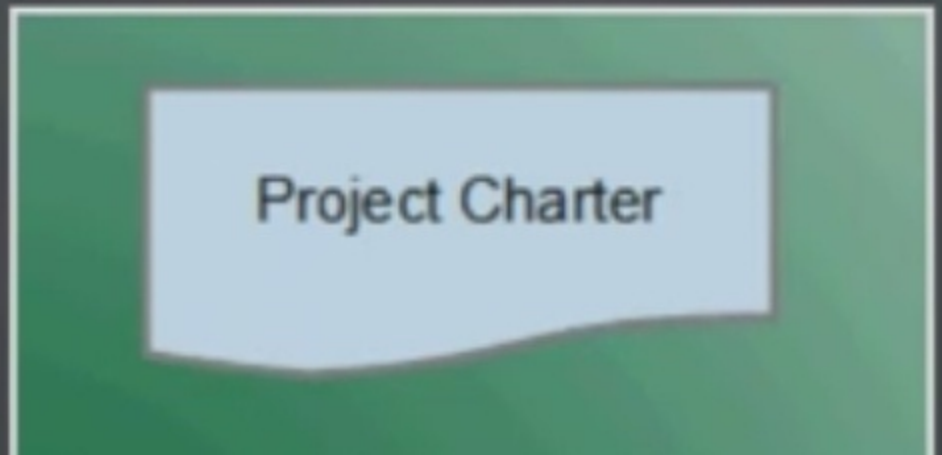
... Continued

- Functional/Technical Specifications by Technical Consultant
- Test Scripts by Functional Consultant/Business Analyst
- Issue log by Project Manager
- Period Status Reports by all members



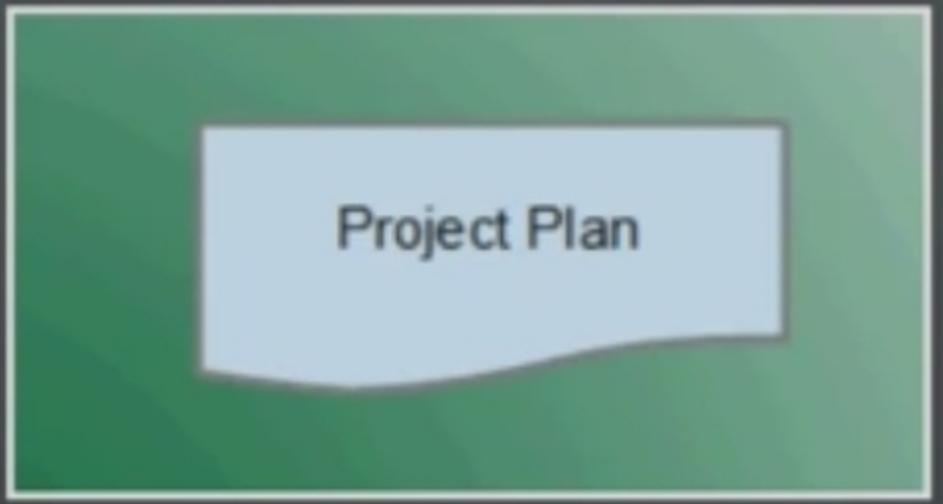
PROJECT CHARTER

Document: Project Charter by Project Manager
Contents: What is involved in the project from a high level perspective, which business needs are behind this project, what benefits it will bring, who is sponsoring the project, what are the risks, what are dependencies and assumptions etc.



PROJECT PLAN

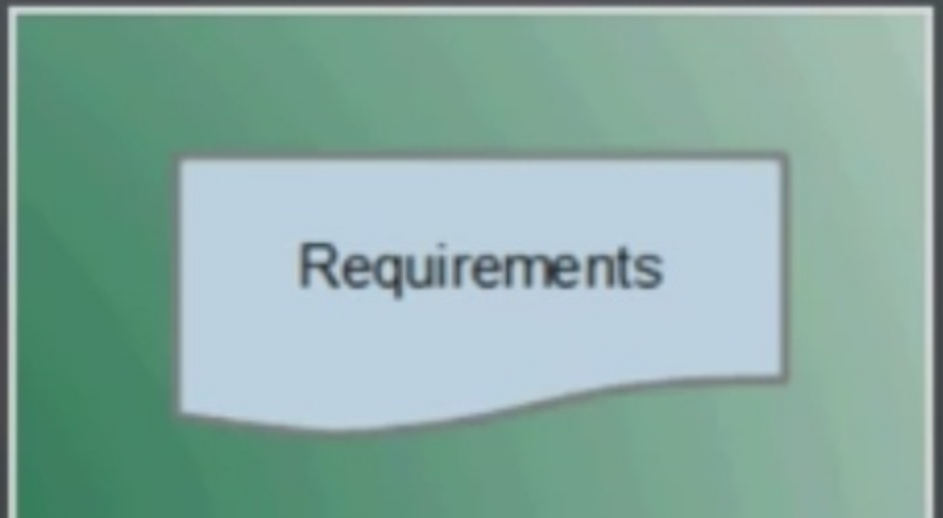
Document: Project Plan by Project Manager
Contents: Tasks that will take place during the project.



REQUIREMENT GATHERING

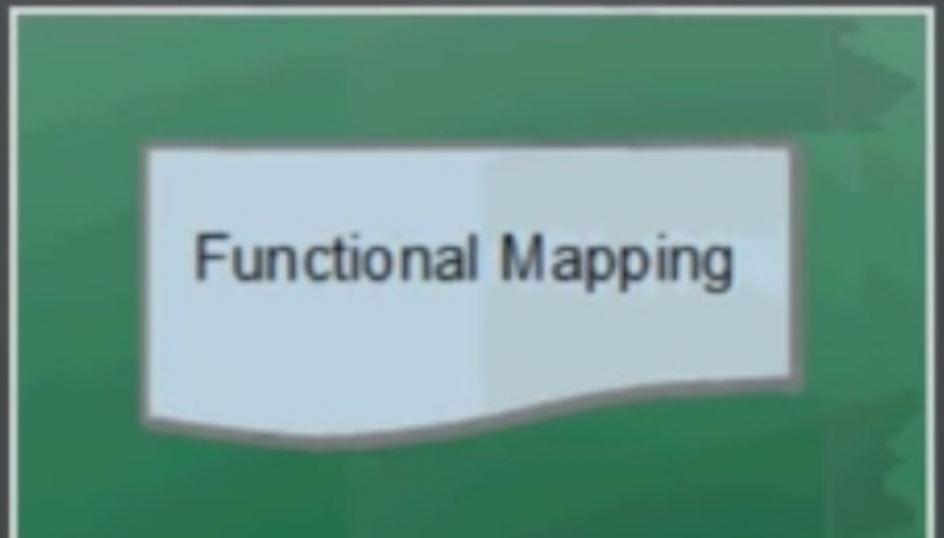
Document: Requirement Gathering document by Functional Consultant

Contents: How the new system should be implemented.



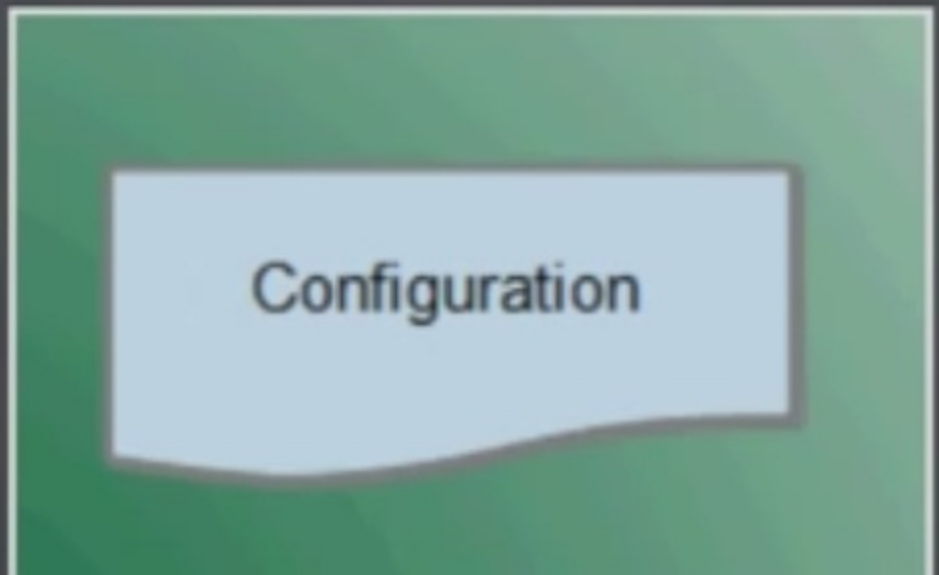
FUNCTIONAL MAPPING

Document: Functional Mapping by Functional Consultant
Contents: Mapping of requirements to the ERP software features; Which features should be enabled in ERP.



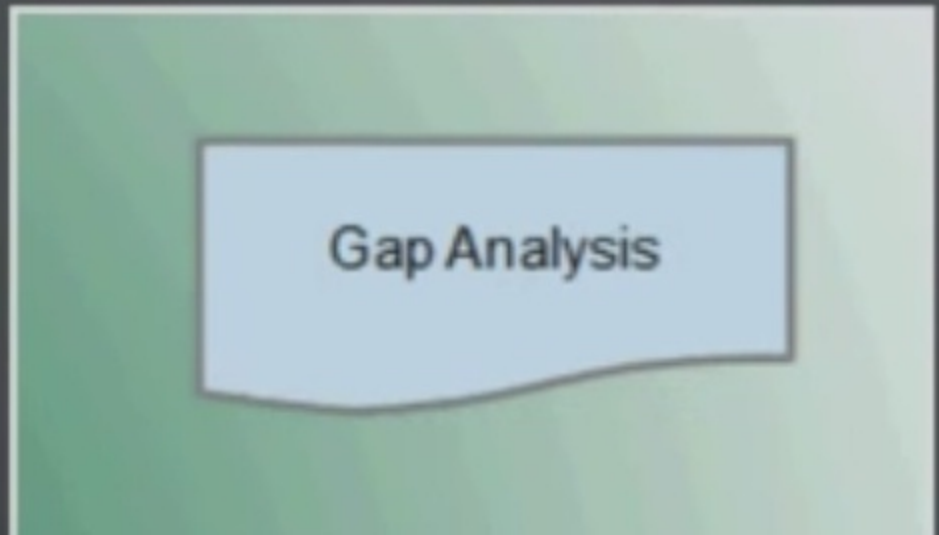
SYSTEM CONFIGURATION

Document: Configuration document by Functional Consultant
Contents: How the new system will be configured so that the required features are available.



GAP ANALYSIS

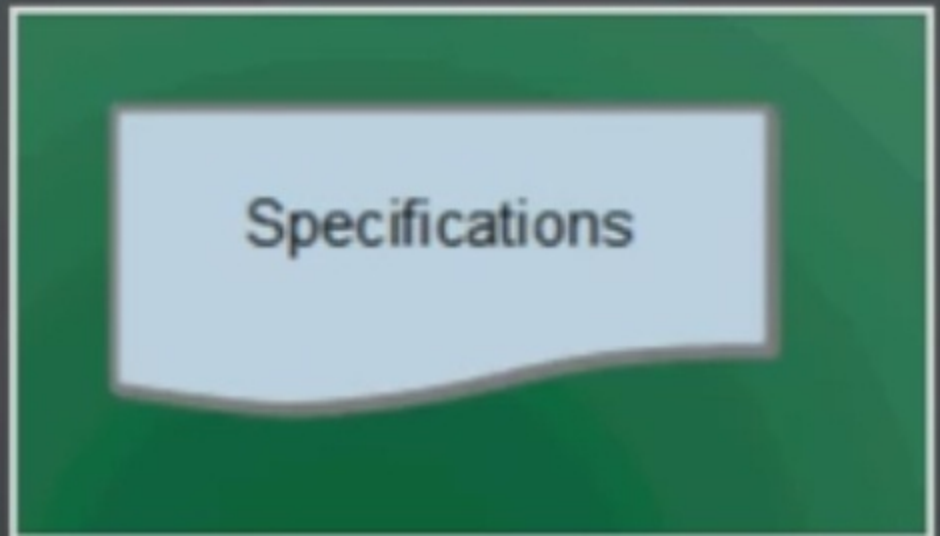
Document: Gap Analysis document by Functional Consultant
Contents: Which requirements are not matched to any of the available features in ERP.



SPECIFICATIONS

Document: Functional/Technnical Specifications by Technical Consultant

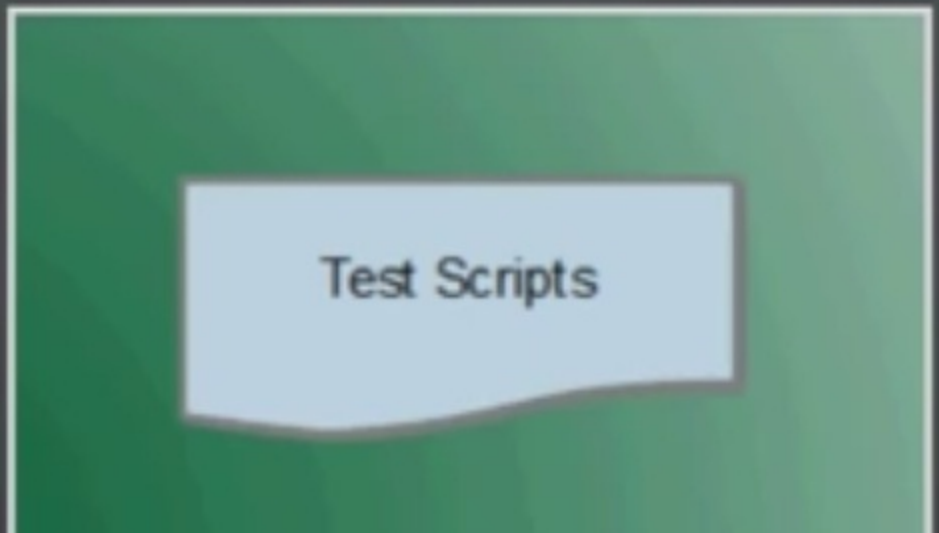
Contents: How custom developed features will work.



TEST SCRIPTS

Document: Test Scripts by Functional Consultant/Business Analyst

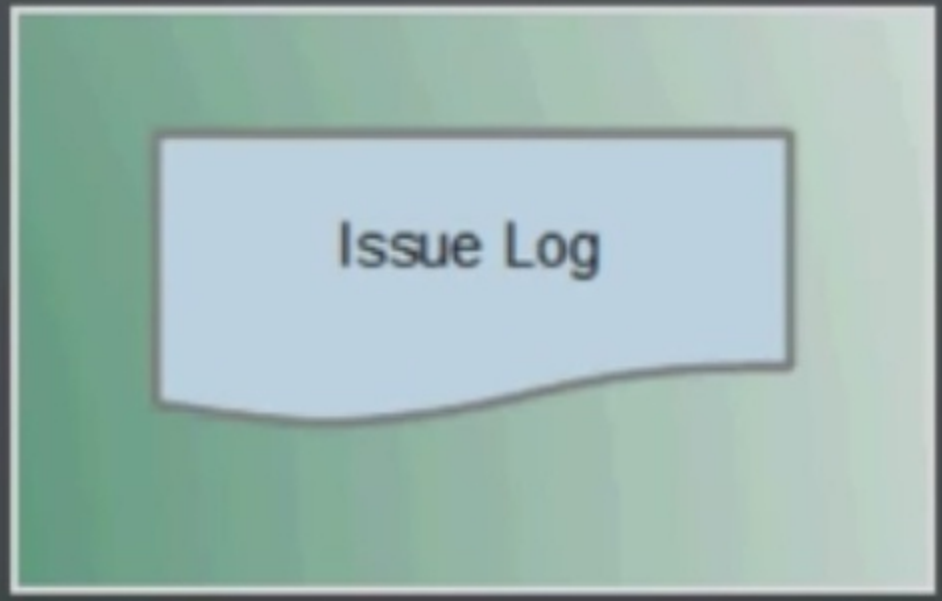
Contents: What steps users will perform during testing. Test Results are also captured by the Business in the Test Scripts document.



ISSUE LOG

Document: Issue log by Project Manager

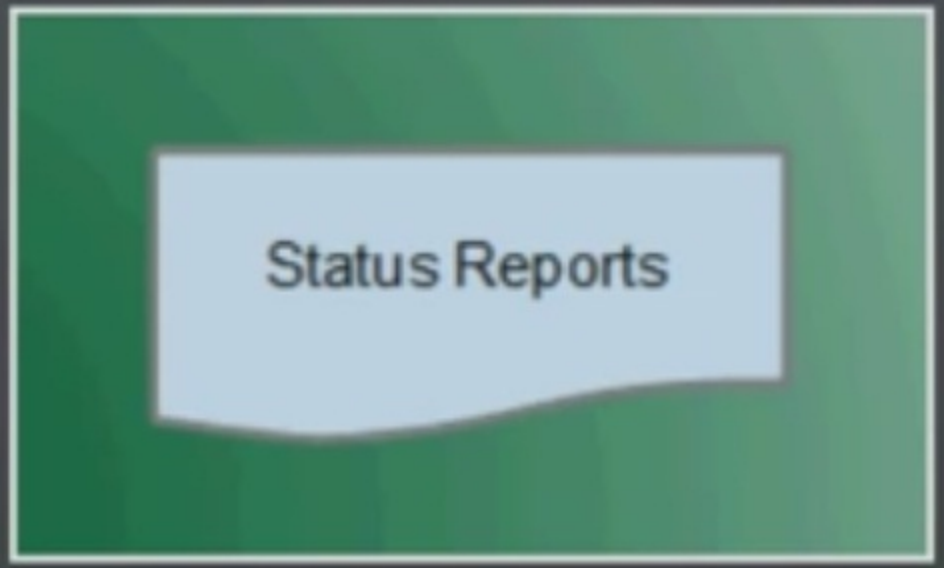
Contents: What problems came up and how they were handled



STATUS REPORTS

Document: Period Status Reports by All

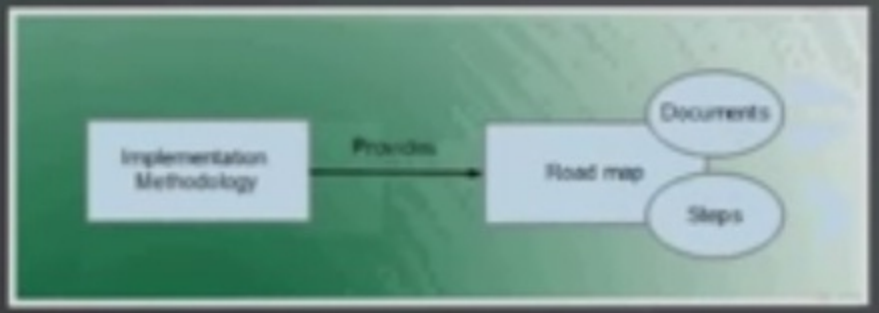
Contents: What was completed last week and what is due next week



IMPLEMENTATION METHODOLOGY

The project teams usually follows an implementation methodology which provides a roadmap through the project. A methodology dictates:

- Which documents will be created at which point
- How the documents will look like (Templates are provided)
- What will be the sequence of configuration tasks.



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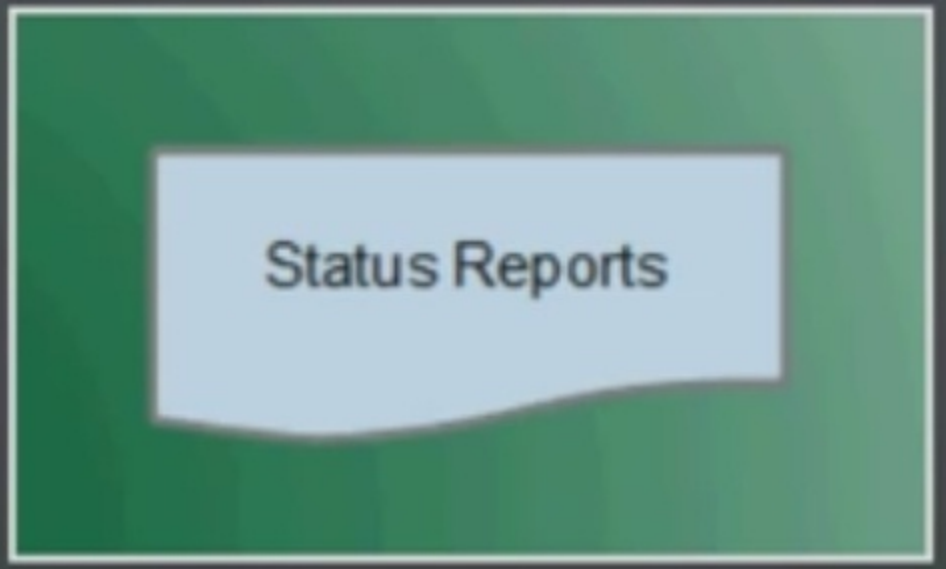

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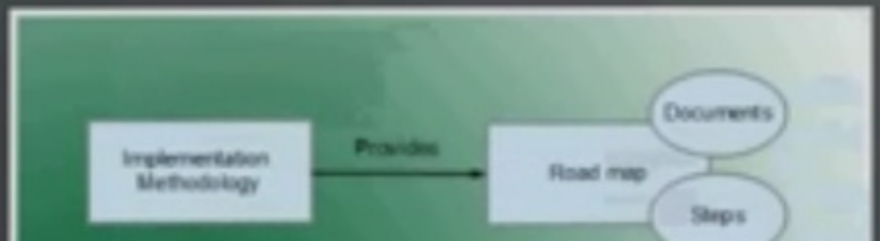
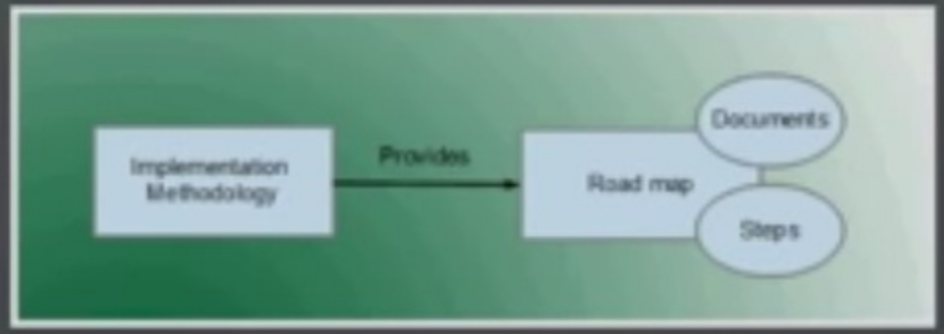


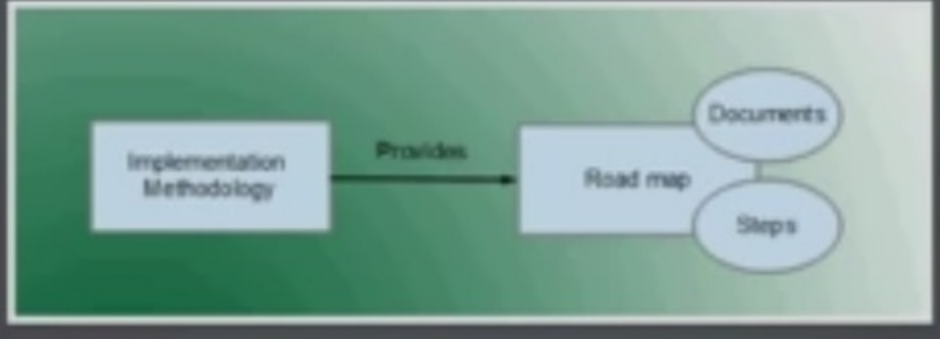
IMPLEMENTATION METHODOLOGY AND PROJECT PLAN

The steps are incorporated in desired sequence, as dictated by the methodology, in the overall project plan managed by project manager.



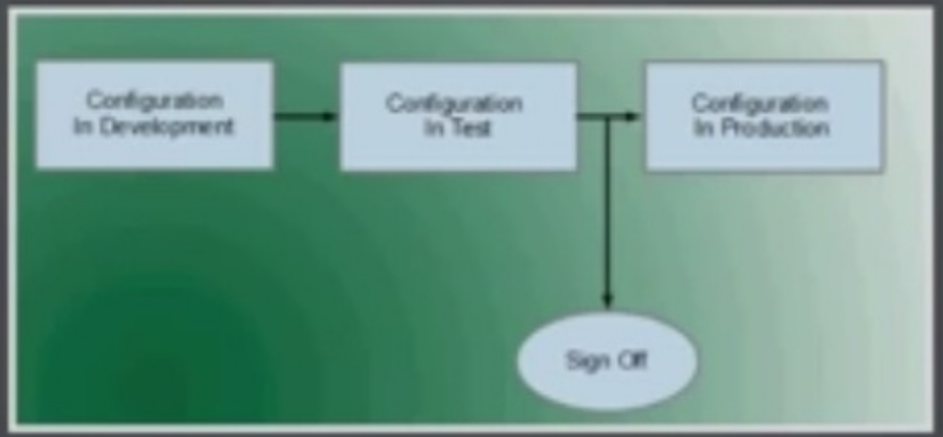
PROPRIETARY METHODOLOGIES

Large and reputed consultings firms usually have their own proprietary methodology that they follow.



SIGN-OFF

Written sign-offs are required from the business at various stages e.g. before moving configuration from Test to Production.



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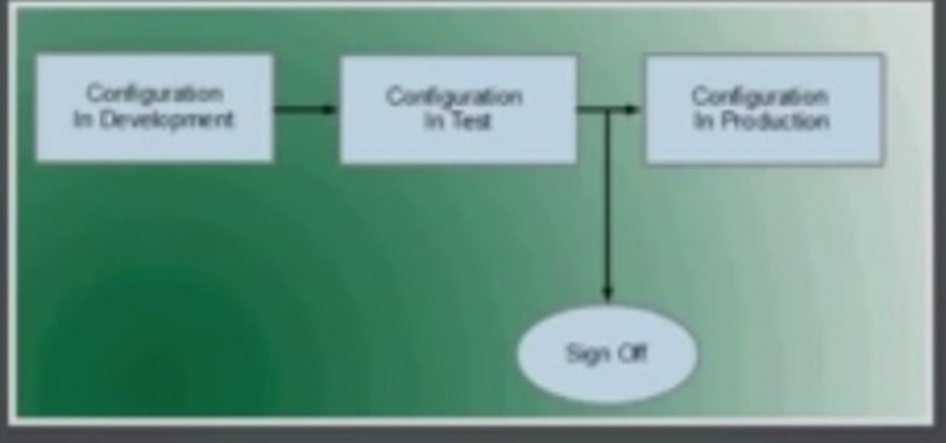
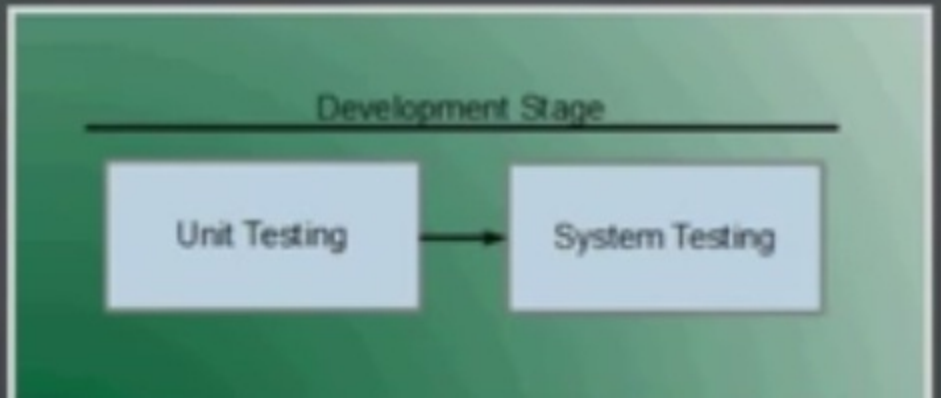


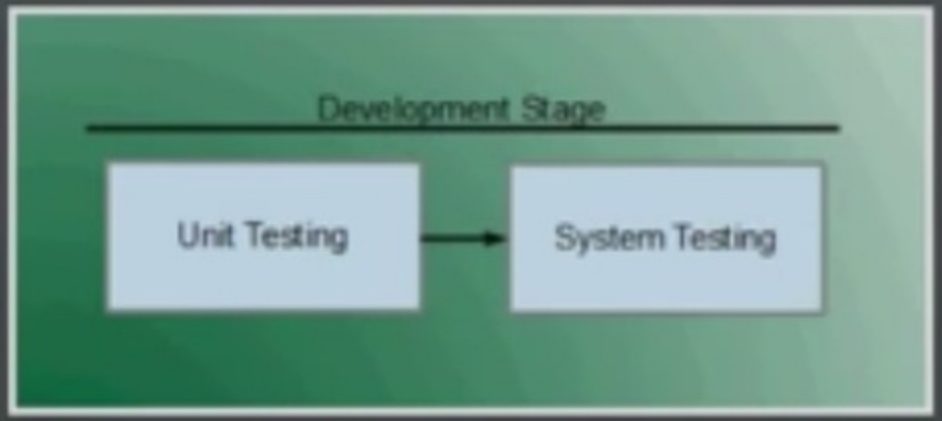
UNIT TESTING

Consultants perform unit testing and system testing during development stage. Unit testing refers to testing of one module (or unit) individually. The focus is on the functionality of the modules.



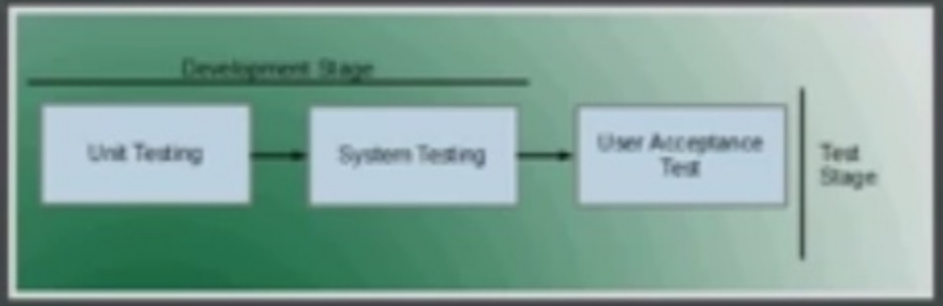
SYSTEM TESTING

System testing refers to the testing of the whole system (all modules together). The focus in on the integrity of the system as a whole e.g. if modules are communicating with each other properly. The testings are performed on development environment, however a separate test environment could be requested as well for this purpose.



USER ACCEPTANCE TESTING

User Acceptance Testing (UAT) is a mandatory testing. Here users drive the system. The consultants train and guide the users. The focus is to verify whatever was promised, is delivered or not. At the end of the testing users must provide a sign-off. All outstanding problems need to be fixed. The testing takes places in Test environment dedicated for this purpose.



Three Different Types of Enterprise Systems

Small businesses implement enterprise systems to gain company-wide access to business knowledge, increase employee productivity and minimize the duplication of company data. Enterprise systems may also enable a business to reduce the cost of information technology and minimize the manual input of data. These enterprise system attributes offer particular benefits, such as the support of teamwork, an improved response to the marketplace, increased work quality and greater employee collaboration and efficiency.

Customer Relationship Management

Customer relationship management systems were developed to address the need to raise a sales department's productivity and make the management of a company's customers an effective way to increase sales. With CRM functions, such as sales opportunity management, a company learns more about its customers' needs and buying behavior and combines this information with market information to enhance the quality of the company's marketing plans and sales forecasts. Other attributes of the CRM system, including the integration of this system with other systems and system access via mobile devices, allow employees to update and compare data regardless of the system it's in and to access information from any client site or other location. Equally important, CRM supports mass e-mail communications and automates the sales process workflow to improve employee productivity.

Supply Chain Management

A supply chain refers to the collection of people, tasks, equipment, data and other resources required to produce and move products from a vendor to a customer. Dr. Robert Hanfield of Bank of America describes supply chain management as the management of supply chain activities by the supply chain firms in an effective and efficient way. According to Hanfield, such activities include product development, material sourcing, production and logistics as well as the information systems that coordinate these activities. Information flows allow supply chain partners to coordinate their strategic and operational plans as well as the day-to-day flow of goods and materials through the supply chain. The physical flows include the manufacture, transport and storage of goods or materials.

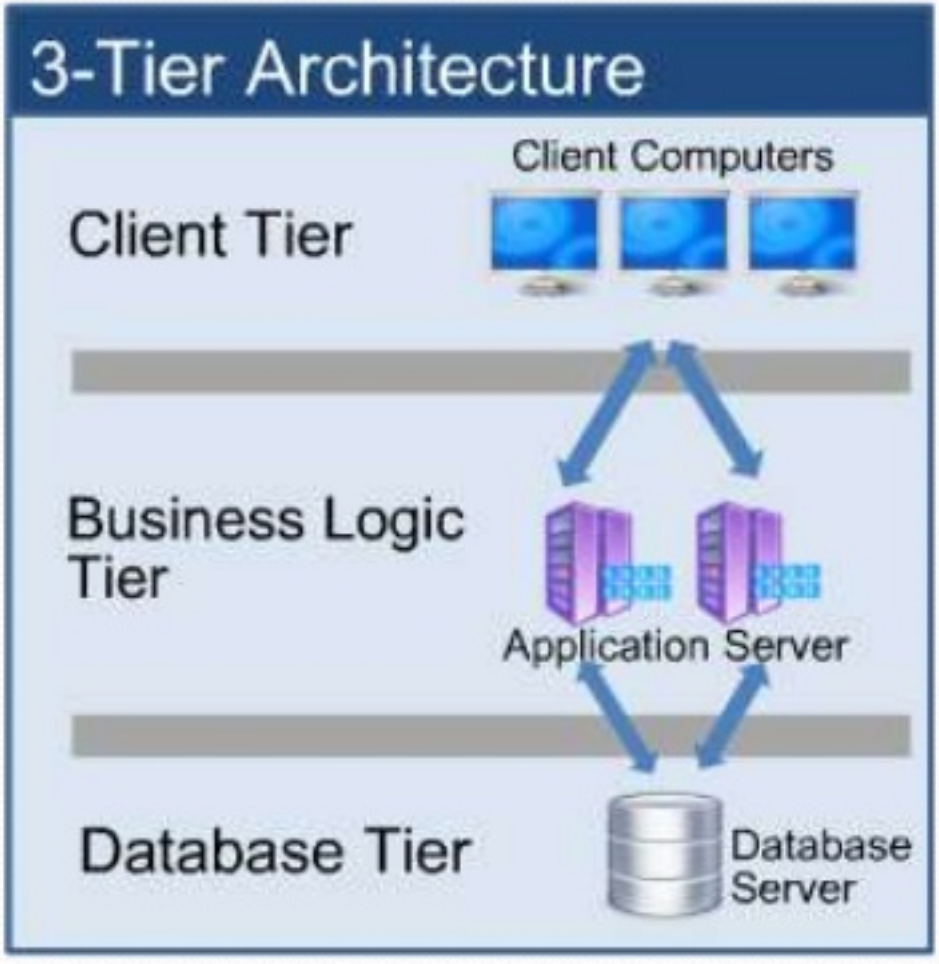
Enterprise Resource Planning

The enterprise resource planning system integrates software applications just as a company integrates business processes, such as purchasing, finance, human resources and inventory management. Within an ERP system, the integrated software modules, such as sales, quality management and accounts receivable, communicate and share data. Each of these modules consists of multiple applications that perform the functions required to execute particular end-to-end business processes. For example, the sales module includes the applications necessary to create and manage sales contracts, sales orders, sales invoices and sales order pricing. ERP applications support not only various operational and administrative tasks, such as the creation of an account payable or a time sheet, they may also be customized to support a number of different industries, including oil and gas, retail and banking.

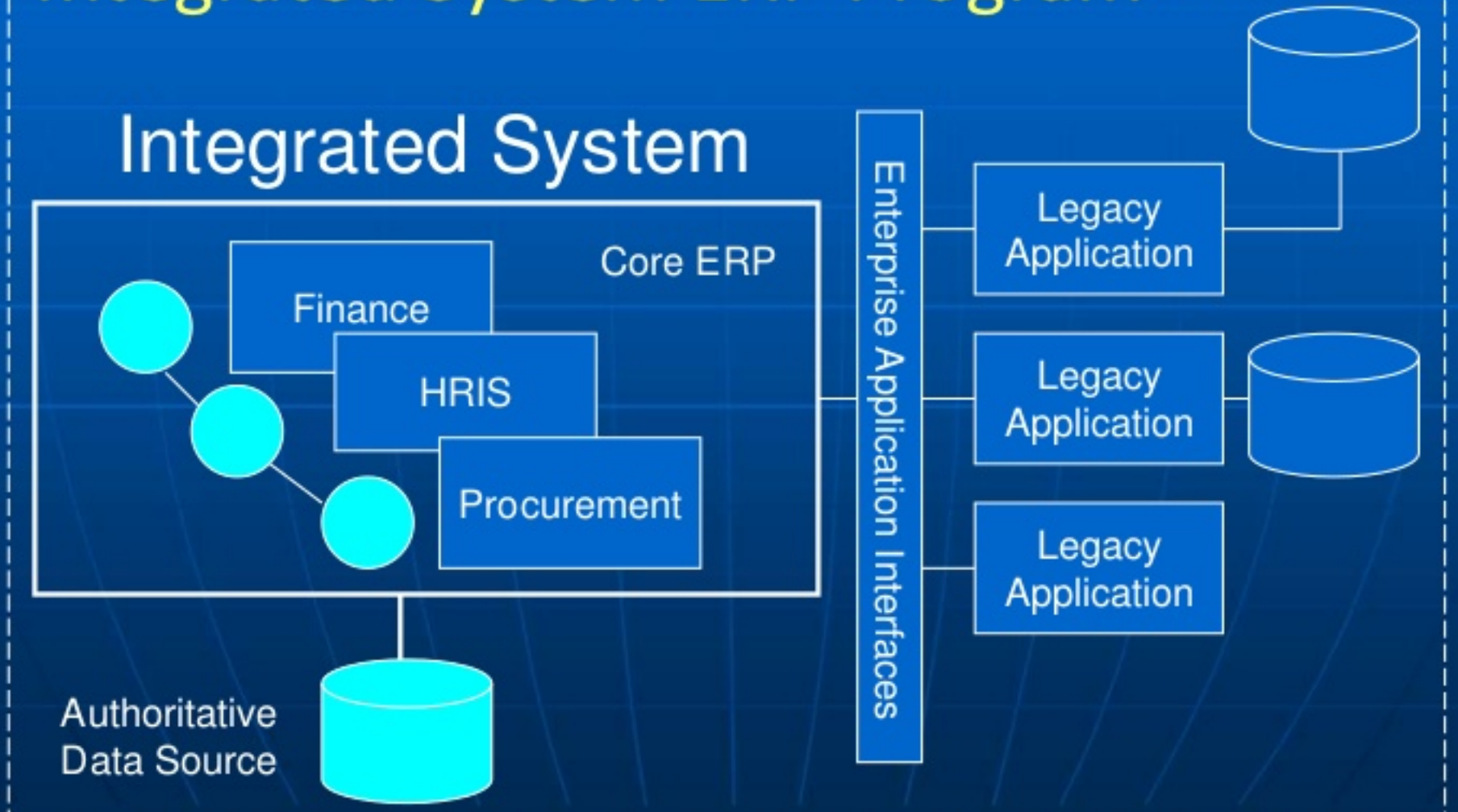
Three-tier Client/Server implementation Architecture

- the database and application functions are separated.
- This is very typical of large production ERP deployments.
- satisfying client requests requires two or more network connections.
- the client establishes communications with the application server which then creates a second connection to the database server.

Three-tier Client/Server Implementation Architecture



Integrated System ERP Program



Traditional View & Transitional View