Module 1

Information system concepts

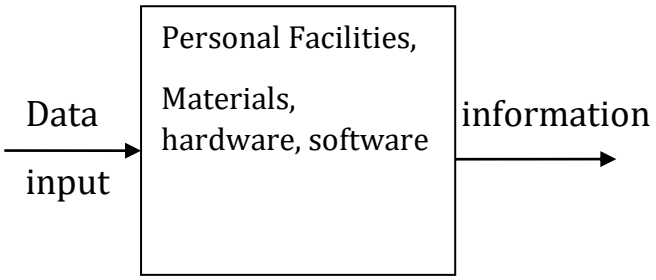
Information system

Information system is a system which is used to generate information. Information is always meaningful

A system is a combination of resources used to convert input to output (data into information)

Resources may include personal facilities, materials, equipments, hardware, software etc

Data: it is the raw fact and it is meaningless. when process the data will be converted to information



Information: it is the processed from of data and it is meaningful

Business information system (BIS)

Business information system is a system which is used to convert data into information .It is used to accomplish the purpose of the business.

For example in a retail store system, that covert sales transaction data into information which is needed to prepare customer billing, calculate profit and loss

The main characteristic of the business information system is to accomplish goal and objectives of the business. Goal is a very broadly stated and is a long term where as objective is the specific accomplishment necessary to the achievement of goal

Describing business organization

Organization Chart(OC)

An **organizational chart**, also called **organigram** or **organogram**, is a diagram that shows the structure of an organization and the relationships. The definition of an organization chart or "org chart" is a diagram that displays a reporting or relationship hierarchy. The most frequent application of an org chart is to show the structure of a business, government, or other organization.

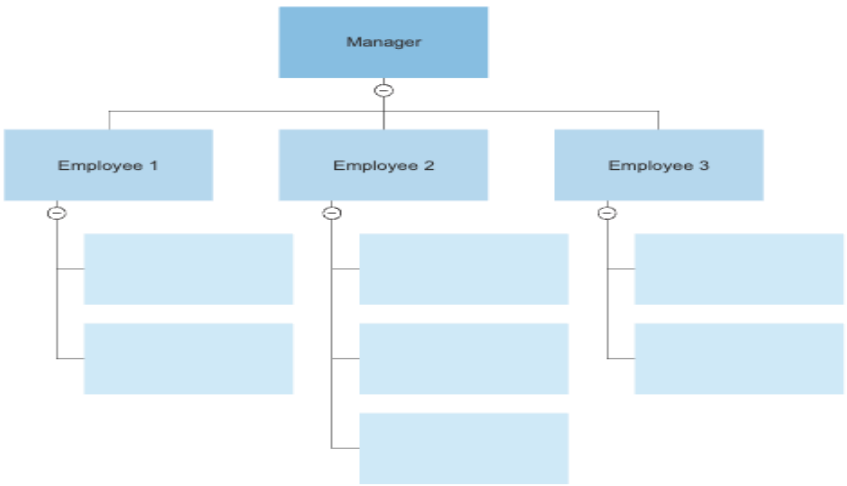
Org charts have a variety of uses, and can be structured in many different ways. They might be used as a management tool, for planning purposes, or as a personnel directory,
OC identifies major finctions of the organization.

Uses of organization chart

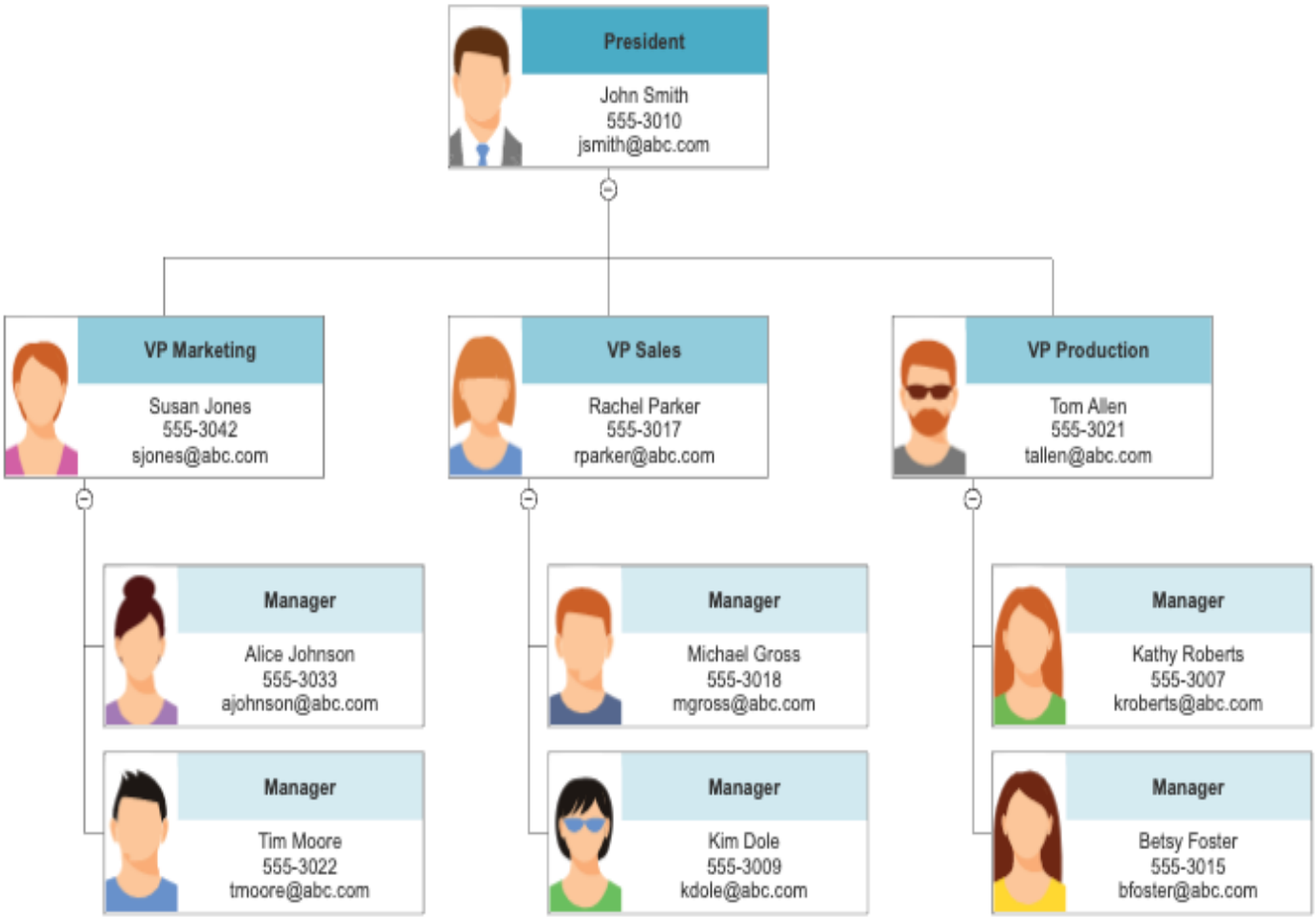
- Show work responsibilities and reporting relationships.
- Allow leadership to more effectively manage growth or change.
- Allow employees to better understand how their work fits into the organization's overall scheme.
- Improve lines of communication.
- Create a visual employee directory.
- Present other types of information, such as business entity structures and data hierarchies.

Structure of organization chart

Most organization chart are structured as a series of superior-subordinate relationship.

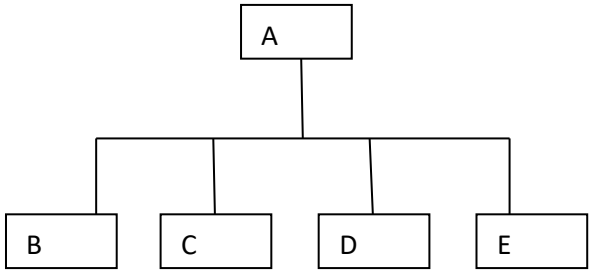


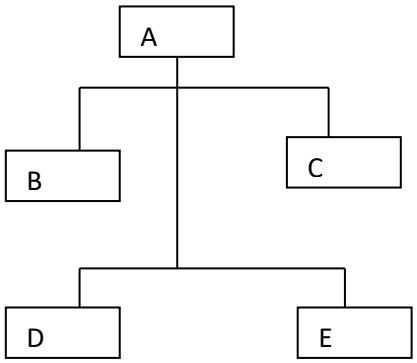
An example of organization chart

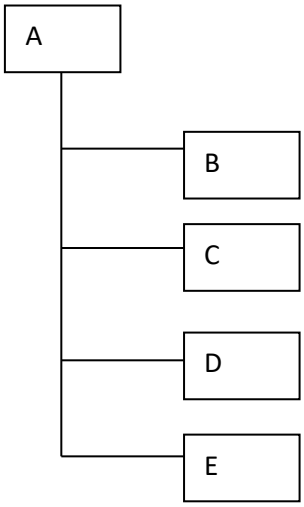


Guidelines for organization chart

- Layout
  We can select either of the following layout







In all the above cases, B,C,D,E are at the same level and subordinates of A

- Title

  the organization chart should have a meaningful title and a standard position should be provided for approvals , date and other identifying information

- Scope
  Scope of the organization chart is to giving an overview of organization's main elements
- Information provided
  each rectangle should contain a title with functional significance, name , salary and other needed details

Organization function list

Organization function list is a document prepared for each organization which describe the specific activities performed by that organization

A separate organization function list is prepared for each element shown on organization chart.The functions are described briefly in the present tense

System analyst who understand the organization chart and its associated function list are important for the analysis phase of software development

Organization function list

System support department

Dept.Number:1310

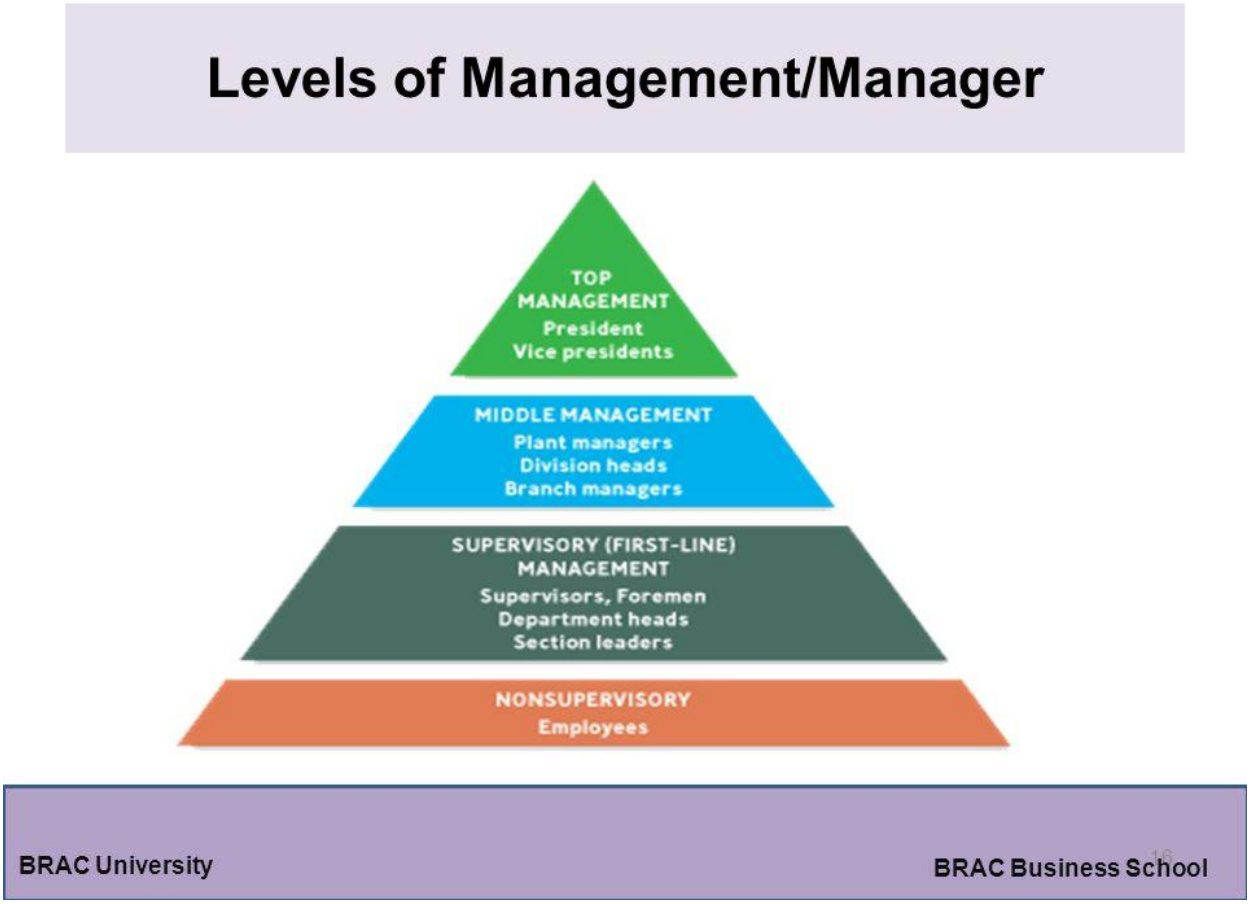
Date :1/2/2000

Approved date:1/1/2000

JJ Werner signature

MR Craft Signature

Information system levels



There are 4 levels of information system exists in the typical organization

1. Operational level or non supervisory level
2. Lower level management or supervisory level
3. Middle level management
4. Top management

Operational level or non supervisory level

At this level, the daily routine production or clerical operations are to be performed. They have no supervising authorities. Accountants, clerical staff are the examples of this level

Lower level management or supervisory level

Lower management performs supervisory functions that are short term relative to the higher level of management. Lower level management deals with day to day job scheduling, checking the results of operations and

taking the necessary corrective actions. Examples are department heads, supervisors etc

Middle level management

Middle level management functions are tactical in nature. This level is responsible for allocating and controlling the resources necessary to accomplish objectives that support the strategic goal of the business.

Here the authority is transferred to lower level management and the performance is measured

Top management

Top management functions are strategic. They include establishment of the goal of the business, long-range plan, new product development etc. Appropriate authority is delicated to middle level management and the performance is measured

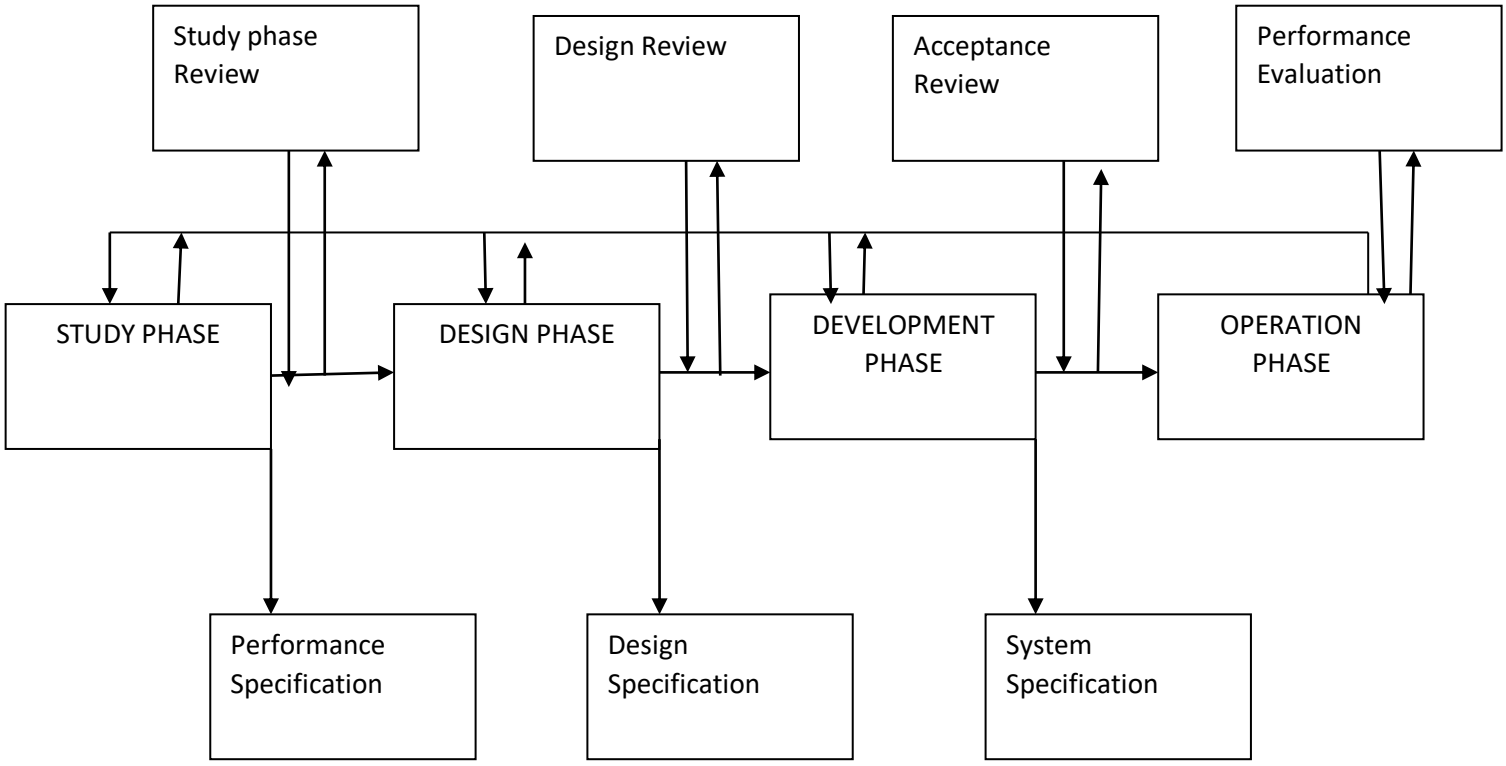
System development life cycle (SDLC)

Software Development Life Cycle (SDLC) is a process used by the software industry to design, develop and test high quality software's. The SDLC aims to produce a high-quality software that meets or exceeds customer expectations, reaches completion within times and cost estimates.

Through SDLC there are two types of end products. hardware and software end products

Hardware end products have physical existence. It means developing machine or any equipments. software end product is a set of programs like website, applications etc

SDLC activities(Phases of SDLC)



Study phase

In this phase problem is identified and analysed and then alternative solutions are studied. Planning for the quality assurance requirements and identification of the risks associated with the project is also done in the planning stage. Once the requirement analysis is done the next step is to clearly define and document the product requirements and get them approved from the customer or the market analysts. This is done through an **SRS (Software Requirement Specification)** document

Design phase

SRS is the reference for product architects to come out with the best architecture for the product to be developed. Based on the requirements specified in SRS, usually more than one design approach for the product architecture is proposed and documented

A design approach clearly defines all the architectural modules of the product along with its communication and data flow representation with the external and third party modules (if any).

Development phase

In this stage of SDLC the actual development starts and the product is built. If the design is performed in a detailed and organized manner, code generation can be accomplished without much hassle.

Developers must follow the coding guidelines defined by their organization and programming tools like compilers, interpreters, debuggers, etc. are used to generate the code. Different high level programming languages such as C, C++, Pascal, Java and PHP are used for coding.

Operation phase

Once the product is tested and ready to be deployed it is released formally in the appropriate market. After the product is released in the market, its maintenance is done for the existing customer base.

Management review of SDLC

The management review of the lifecycle activities may occur at any time. The conclusion of each phase is the time for the management review. The major management reviews are

1. Study phase review
2. Design phase review
3. Acceptance review
4. Performance review

These are the formal review that must occur before a phase can be considered to be complete

Three types of decisions can be taken based on the management review of phases

1. Proceed to next phase
2. Cancel the project
3. Redo certain parts of the previous phase
4. The activities that are redone must be reviewed before the project can proceed to a subsequent phase

Documenting (Baseline Specifications)

The most essential documents needed for a project is called baseline specification. There are three baseline specifications

1. Performance specification
2. Design specification
3. System specification

Performance specification:- it is created after the completion of study phase. It describes the requirements of the system and specifies "what the system must do". It is a "design-to" specification

Design specification:-it is created after the completion of a design phase. It describes the programming language to be used in the system and the basic designs. It is a "build-to" specification

System specification:-it is created after the completion of development phase, It contain all the critical system information's .it is the basis for all manuals and procedures and it is complete "as-built" specification

Design specification evolves from performance specification and system specification evolves from design specifications

Roles of the Systems Analyst

System Analysts are responsible for maintaining and improving computer systems for an organisation and its clients. The **Analyst** starts requirements gathering and analysis activity by collecting all information from the client

- Analyze, design and develop new systems or maintain current systems.
- Resolve technical issues on new system development or maintain current systems.
- Designing new computer systems and frameworks
- Collaborating with Business Analysts, Project Leads and IT team to resolve issues and ensuring solutions
- Creating system guidelines and manuals for the organization
- Running training sessions and workshops on system processes

- Record project scope, goals, requirements and benefits.
- Maintain project within budget.
- Conducting regular reviews of systems and generating reports on efficiencies and improvement areas
- Prepare and maintain business organization chart
- Perform recorded management including the distribution and use of reports