Chapter 3 Organisations and information system

I. Introduction to organisation:
An organisation is defined as a systematic arrangement of people to accomplish some specific purpose
Three common characteristics:
- Has a distinct purpose
- Is composed of people
- Develops a systematic structure that defines and limits the behaviour of organisational members.

II. Workgroup information system:
A workgroup is a collection of people who work together to achieve a common goal.
Workgroup information system allows hardware and data sharing. It helps improving the productivity of workgroup and reducing costs.

- *Homogeneous :* all members carry out the same role; e.g. writing a report, processing data
  or *heterogeneous:* members carry out several roles e.g. writing software, designing a network
- *Permanent*
  or *temporary*
- *Hardware sharing* (e.g. sharing the storage devices, sharing the network computer)
  and/or *data sharing* (e.g. sharing project related information among project members, sharing accounting information among the firm)

A workgroup information system can benefit users in:
- Communication: providing better communication channels e.g. email, teleconferencing
- Collaborative writing: let users coordinate in writing documents as well as control the writing process.
- Analytical support : is normally provided by workgroup spreadsheets, spreadsheet templates
- Retrieval of information: let users track and monitor the work process so as to improve coordination e.g. workflow automation system, group scheduling systems, group project management systems etc.

III. Group decision support systems:
Group decision support systems: a computer-based system that supports groups of people engaged in a common task (or goal) and that provides an interface to a shared environment"

Other terms for GDSS: group support system (GSS), computer-supported cooperative work (CSCW), computerised collaborative work support and electronic meeting system (EMS)

How can GDSS contributes to problem solving?
- GDSS improves communication by keeping the discussion focused on the problem
- Less wasted time
- Time gain can be devoted to a more thorough discussion of the problem
- Or time gain can be devoted to identifying more alternative that would otherwise be possible.

V. Personal information systems:
Personal information systems: Systems that facilitate the work of individual.
How can personal information systems facilitate individual working?
- Communication support: word processing, desktop publishing
- Analytical support: spreadsheet, scripting and macro languages
- Tracking and monitoring support: widely used in project management to keep track of a project progress.

VI. The system development process:
Logic

Example: define problem: inefficient accounting information system
Requirements: change the report formats, change the mathematical models
Design: design the formats, apply appropriate mathematical models
Develop/code: done by information specialists
Test: detect defects, make correction
Deploy/maintain:

Phases:
The Planning phase
The Analysis phase
The Design phase
The Implementation phase
The Use phase

1. The Planning Phase:
a. Benefits
- Define the scope of the project: which organisational units, activities or systems will be involved? What is the *initial* estimate of the scale of resources required?
- Recognised potential problem areas: planning will point out what may go wrong so that problems may be prevented
- Arrange a sequence of tasks: many separate tasks will be necessary to achieve the system/ These task should be arranged in a logical sequence for efficiency

- Provide a basis for control: certain levels of performance and methods of measurement should be specified in advance

b. Steps in Planning phase:

- Recognise the problem: problems are usually identified by end-users of IS rather than IS specialists.
- Define the problem: identify where the problem exists and what the causes may be
- Set system objectives: managers and system analyst develop a list of objectives that the system must meet in order to satisfy the users. Objectives may be stated in *general terms*
- Identify system constraints: e.g. report format requirements, deadlines
- Conduct a feasibility study: a brief look at the major factors that will influence the ability of the system to achieve the desired objectives. Major factors are:
    - Technical: is the hardware and software available to perform the necessary processing
    - Economic return: are the benefits greater than costs? (with items measurable in monetary terms)
    - Non-economic return: are benefits greater than costs? (with items non-measurable in monetary terms)
    - legal and ethical
    - Operational: will it receive the support of people who must make it work?
    - Schedule: can the system implementation be imposed within the time constraints?
- Prepare a system study proposal: document that provide detailed basis for the design of new system in terms of what it should do and how it should do it.
- Approve or disapprove the study project
- (If approved) Establish a control mechanism

2. The analysis Phase

Steps:

- Announce the system study: communication with users on the benefit of the new system and on the reasons for the system development will minimise the fears of how the change might affect their job.
- Organise the project team: end-users should play an active role in the project team (e.g. project leader).
- Define information needs: learn about user's information needs (e.g. the formats of charts, flowcharts, graphs, reports that are required by users)
- Define system performance criteria: with knowledge of the information needs, analysts can choose what are most appropriate for the new system.
- Prepare the design proposal (performance criteria; recommended design project- tasks that should be completed, human resources required, estimated cost, schedule; expected impacts of the system – firm's structure, operation, resources).
- Approve or disapprove the design project

3. The design Phase

The determination of the processes and data that are required by a new system.

Steps:

- Prepare the *detailed* system design (configuration: hardware requirement)
- Identify alternative system configurations.
- Evaluate alternative system configurations
- Select the best configuration
- Prepare the implementation proposal (design proposal+system design)
- Approve or disapprove the system implementation

4. The implementation Phase

Implementation is the acquisition and integration of the physical and conceptual resources that produce a working system.

- Plan the implementation: with the thorough preparation, the team can use the knowledge to develop a very detailed implementation plan.
- Announce the implementation: in the same way as the system study
- Obtain the hardware resources: including testing
- Obtain the software resources
- Prepare the database: reformat existing database, gather new data.
- Prepare the physical facilities: rooms, security measures, fire prevention etc.
- Educate the participants and users
- Cutover to the new system:
    - Pilot: transfer subgroups
    - Immediate: appropriate to small, medium size system only
    - Phased: transfer one by one
    - Parallel: run both system, transfer gradually

5. The Use phase

- Use the system
- Audit the system: Post implementation review
- Maintain the system: system maintenance (to correct errors, to keep systems current, to improve the system)

VI. Different approaches to system development

Prototyping

Type 1 prototype:

- Identify user need

- Develop a prototype
- Determine if the prototype is acceptable
- Use the prototype

Type 2:

- Code the operational system: use the prototype as the basis for coding the operational system
- Test the operational system
- Determine if the operational system is acceptable
- Use the operational system: as the operational system

Benefits

- improved communication
- active role of users
- less time
- easier implementation

Rapid Application Development (RAD)

Ingredients of RAD

- Management: fully supportive of RAD
- People: requirement planning, user design, construction, user review, and cutover
- Methodologies: four phases: requirement planning, user design, construction, and cutover. Users play the key role.
- Tools: 4th generation languages and CASE tool (computer aided design engineering)