

1. Cross Life-cycle Activities

Previously, we have discussed the elementary stages of Information System life cycle development approach. Actually information system development also involves a number of cross life cycle activities means, any activity that overlaps many or all stages of the information system development process.

Example: Documentation, presentation, feasibility analysis, fact finding, project and process management.

Fact finding activity relates to collect information are as follows:

- *Interview.*
- *Personal observations.*
- *Questionnaire.*
- Other technique regarding the problems, opportunities, requirements and their priorities.

Fact finding is also required for design analysis, detailed decision final design implementation and maintenance stages.

Documentation is a continuous process of recording each fact finding and specification for correct and future references.

Presentation is a continuous activity of communicating either orally or in writing the findings and recommendations for review by the information system user and information system owners.

Both of these activities are required at almost all stages of information system development project. In other words, these activities have a wider scope through-out the development process. Both are essential to each stage because poor communication will cause delay and cost over runs.

Feasibility analysis is a good estimation technique which estimates cost, time and other related resources required to develop information system. This is also a cross life cycle activity.

Feasibility analysis are applicable to different stages of the information system life cycle development approaches. Process and project management is one of the principles for developing effective info system and is also a cross cycle activity.

There are a large number of unsuccessful information systems?

Due to that most of system analysts do not have managerial skill, are unfamiliar with how to properly employ tool technology to system development projects.

Because of this lacuna there are:

- Cost overruns.
- A system with unfulfilled or unidentified information needs.

So in order to have successful information system, an analyst must have managerial and good communication skills as well as he should be well versed in each stage and cross life cycle activities.

The System Development Life Cycle (SDLC) is the traditional system development method used by most organizations today. The *SDLC* is a structured frame that consists of sequential processes by which information systems are developed.

These include:

- Investigation,
- System analysis,
- System design,
- Programming testing,
- Implementation,
- Operation,
- Maintenance.

These processes, in turn, consist of well-defined tasks. Some of these tasks are present in most projects, whereas others are present in only certain types of projects. That is, large projects typically require all the tasks, whereas, smaller development projects may require only a subset of the tasks.

In the past, developers used the '**Waterfall approach**' to the **SDLC** in which tasks in one stage were completed before the work proceeded to the next stage.

Today, system developers go back and forth among the stages as necessary.

System development for business applications is not an easy task. In developing a large integrated system such as MIS, many people are involved and many months or even years are spent. However, a small independent application such as Payroll can be developed in few weeks or months by a single or few programmers. For such small systems, system development activities may be done implicitly without proper documentation. But, for large systems, these activities must be done explicitly with proper planning and documentation. Whether a system is small or large, system development revolves around a life cycle that begins with the recognition of users' needs and understanding their problems. Such a life cycle comprising various phases is called System Development Life Cycle (SDLC).

1.1 System Analyst

The systems analyst is a person who is overall responsible for development of a software. He is a computer specialist charged with analyzing, designing and implementing computer-based information systems. He is the crucial interface between users, programmers and MIS managers.

The system analyst conducts the following:

- *A system's study.*
- *Identifies activities and objectives.*
- *Determines a procedure to achieve the objective.*

He is the crucial interface among users, programmers and MIS managers. A Systems analyst can be defined as follows:

A ***Systems analyst***: Is a computer specialist who translates business problems and requirements into information systems and acts as a link between IS (Information Systems) department and rest of the organization.

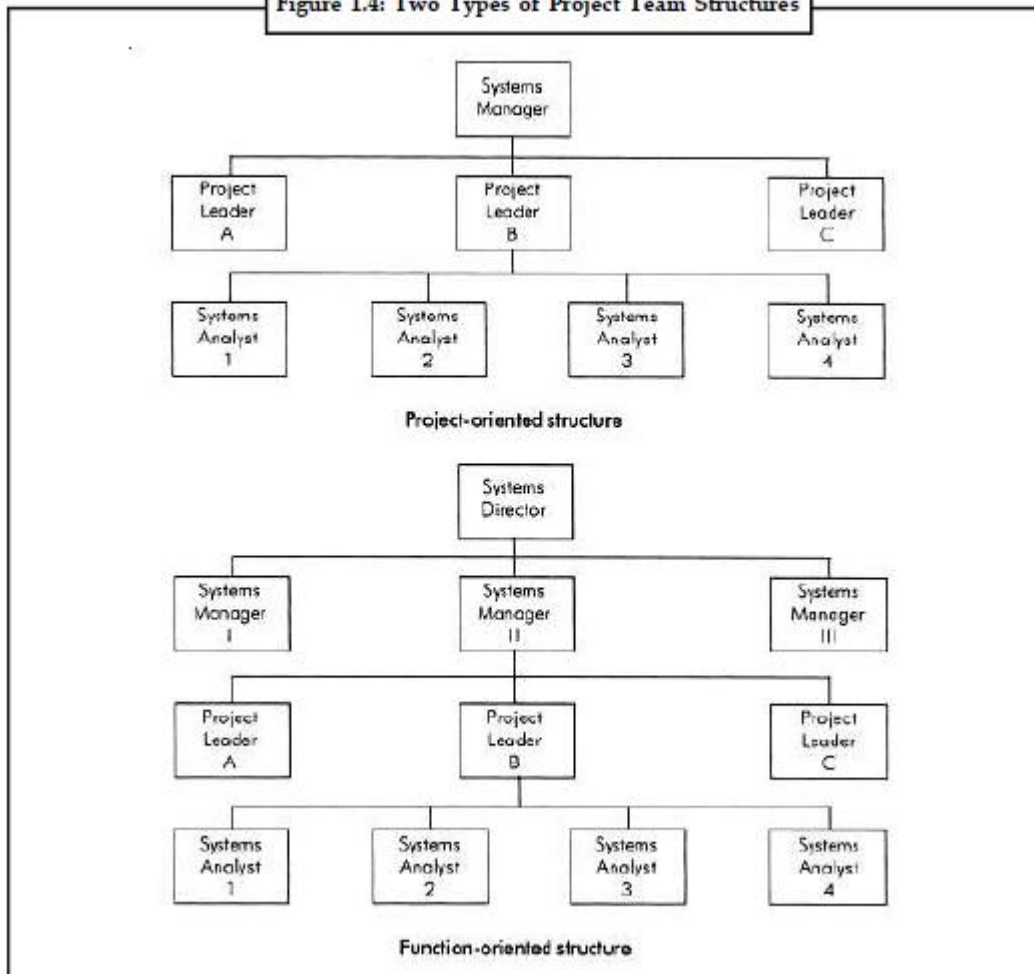
He is the key member of both *MIS* organization and the software *project* team.

1.1.1 Roles of a Systems Analyst

The Systems analyst performs the following roles during various phases of SDLC. He works as a:

- (a) ***Problem Investigator***: The analyst studies the problems and needs of an organization during feasibility and requirements analysis phases of SDLC.
 - He visits the various departments of the organization and interviews the users.
 - He analyses the problems of the current system and collects their new requirements.
 - He initially works as an investigator by extracting the real problems of the users.
- (b) ***Problem Solver***: The analyst solves the problems of the current system faced by the users.
 - He determines how people, method and technology can improve the current system.
 - After feasibility analysis, he presents the system proposal to the management.
- (c) ***Systems Designer***: The analyst creates a detailed physical (current) and logical (proposed) design of the system.
- (d) ***Motivator***: The analyst motivates users to participate in development and implementation of the proposed system. This helps to understand user's feelings about the proposed system.
- (e) ***Project Manager***: The analyst monitors the development and implementation of software in relation to *quality, cost* and *time*. He works with the project leader for managing the project properly. *For development of small systems, the Systems analyst is generally the project leader.*

Figure 1.4: Two Types of Project Team Structures



1.1.2 System Analyst Characteristics

Success in systems analysis requires interpersonal and technical skills of the analyst. The systems analyst is expected to possess the following qualities:

1. **Qualified:** The analyst must be highly qualified in software technology as well as he should have a good knowledge of hardware and latest communication and networking technology.

He must have a thorough awareness about the working (manual and computerized) of financial accounting, sales and marketing, invoicing, inventory control, production and other information systems of different organization.

2. **Analytical Thinker:** The analyst must be capable to extract real problems of the users by analyzing the existing system. He is expected to provide the best solutions to the problems. He should be able to provide more than one solution to a single problem so that the users can select the best one.

3. **Good Communicator:** The analyst must have a good communication and presentation skills. He must have an excellent knowledge on the language which the user can understand. There

should not be any communication gap between the systems analyst and users.

- 4. Experienced:** The analyst should be experienced in both *information* and *management technologies*.

Example: The present day systems analysts are expected to possess a good experience in development of software using 4GLS (such as Oracle, Sybase, etc.) and object-oriented languages (such as C++).

- 5. Creator:** The analyst should possess excellent creativity skills that help to convert ideas of the users into concrete plans. He should be capable of creating plans and designing systems by drawing diagrams, charts and other illustrations.
- 6. Trainer:** The analyst should be a good teacher for educating and training users in computer-based information systems.