CSC 215

SYSTEMS ANALYSIS AND DESIGN

Course Lecturer;

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Introduction to Systems Analysis and Design

- **System Analysis**
- When a company wants to change to a computerised system, the requirements of the company are studied and analysed, then it is decided or not the computerised system will improve the efficiency of the company.
- If yes, a computer system is created.
- This is known as Systems Analysis. System analysis is the study of a problem domain to recommend improvements and specify the requirements for the solution.

- **System Design**
- This is the specification or construction of a technical, computer-based solution for the requirements identified during system analysis.

- **Systems Analysis and Design**
- Systems are created to solve problems. Before a system is created, there must be a problem.
- Once the problem is defined, a system is developed to solve it.
- The investigation will result in finding out the best course of action:
  - Whether to leave things as they are
  - Upgrade the current system, or
  - Develop a new computerised system.

- If it is decided that a new system is to be developed, the next phase is analysis.
- Analysis involves carrying out a detailed study of the present system, leading to the specifications of a new system.
- As the weaknesses of the current system are identified, the user will specify what s/he wants out of the new system.
- The aim target of analysis is a specification of what the new system is to accomplish.

- Based on the user requirements, the new system must be designed.
- The features of the new system are specified and the costs of implementing them and the benefits of the system are estimated.
- Then, input, output and processing specifications are drawn up in detail.
- When the design is completed, implementation begins.
- Implementation involves the actual programming and testing of the new system.

- The system is then installed (put in place ready to be used) and is ready to go into operation.
- When it is operating, the system may be monitored to determine if it is performing up to expectations and if not, modifications (changes) will be made.
- As time goes by, the system may have to be changed because of changing requirements, like more customers, more employees or even new technology.
- Eventually, the useful life of the system comes to an end because changes are too expensive or the equipment used is out-dated.
- It becomes necessary and economical to replace the old system with a new one. Thus the life cycle of a system ranges from problem definition to its death.

- **Why we study systems analysis and design**
- Today, it is hard to imagine any industry or business that has not been affected by computer-based information systems and computer applications.
- Many businesses consider management of their information resource to be equal in importance to managing their other key resources: property, facilities, equipment, employees and capital.

- **Why systems are developed**
- Systems are created to solve **problems**. One can think of the systems approach as an organised way of dealing with a problem.
- In this dynamic world, the subject system analysis and design, mainly deals with the software development activities.

- Systems analysis and design seeks to understand what humans need to analyze data input or data flow systematically, process or transform data, store data, and output information in the context of a particular business.
- Furthermore, systems analysis and design is used to analyze, design, and implement improvements in the support of users and the functioning of businesses that can be accomplished through the use of computerized information systems.

- Installing a system without proper planning leads to great user dissatisfaction and frequently causes the system to fall into disuse.
- Systems analysis and design lends structure to the analysis and design of information systems, a costly endeavour that might otherwise have been done in a haphazard way.
- It can be thought of as a series of processes systematically undertaken to improve a business through the use of computerized information systems.

- Systems analysis and design involves working with current and eventual users of information systems to support them in working with technologies in an organizational setting.
- User involvement throughout the systems project is critical to the successful development of computerized information systems.