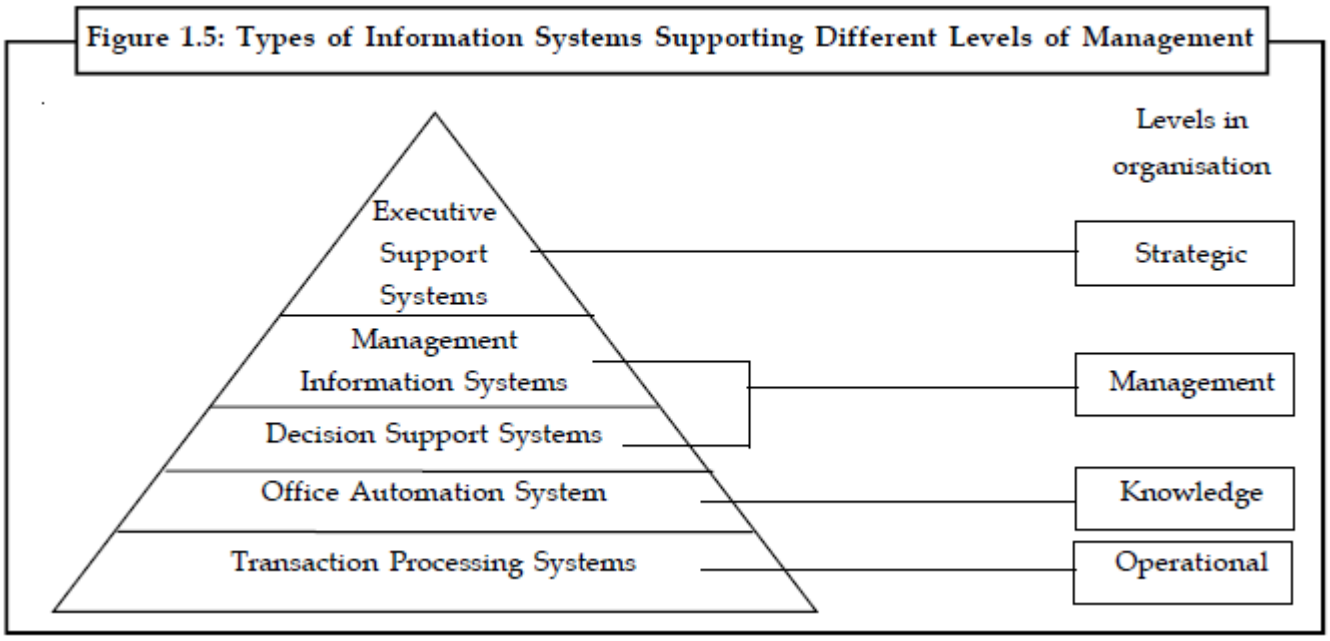

1.4.4 Office Automation System (OAS)/ Office Information System (OIS)

This system serves the knowledge level of an organization for supporting knowledge workers like production managers, Electronic Data Processing (EDP) managers, etc.

OAS use computer system to increase the productivity of technical managers in the office.

An Office Information System (OIS) is an information system that uses hardware, software and networks to enhance work flow and facilitate communications among employees. With an office information system, also described as office automation; employees perform tasks electronically using computers and other electronic devices, instead of manually.

Example: With an OIS, a registration department might post the class schedule on the Internet and e-mail students when the schedule is updated.
In a manual system, the registration department would photocopy the schedule and mail it to each student's house.

1.4.4.1. What does an OIS serve?

An office information system supports a range of business office activities such as:

- Creating and distributing graphics and/or documents.
- Sending messages.
- Scheduling.
- Accounting.
- Etc.

The software used by an office information system to support the above activities includes word processing, spreadsheets, databases, presentation graphics, e-mail, Web browsers, Web page authoring, personal information management.

An OIS uses communications technology such as voice mail, facsimile (fax), videoconferencing, and Electronic Data Interchange (EDI) for the electronic exchange of text, graphics, audio, and video. Besides, it uses a variety of hardware, including computers equipped with modems, video cameras, speakers, and microphones; scanners; and fax machines.

1.4.5 Transaction Processing System (TPS)

A ***Transaction Processing System*** (TPS) is an information system that captures and processes data generated during an organization's day-to-day transactions. A transaction is a business activity such as a **deposit**, **payment**, **order** or **reservation**.

Clerical staff typically performs the activities associated with transaction processing, which include the following:

- Recording a business activity such as a student's registration, a customer's order, an employee's timecard or a client's payment.
- Confirming an action or triggering a response, such as printing a student's schedule, sending a thank-you note to a customer, generating an employee's paycheck or issuing a receipt to a client.
- Maintaining data, which involves adding new data, changing existing data, or removing unwanted data.

Usually, the TPS computerized an existing manual system to allow for faster processing, reduced clerical costs and improved customer service.

The first TPSs usually used batch processing, i.e., transaction data is collected over a period of time and all transactions are processed later, as a group.

As computers became more powerful, system developers built online transaction processing (OLTP) systems. With OLTP the computer processes transactions as they are entered. When you register for classes, your school probably uses OLTP. The registration administrative assistant enters your desired schedule and the computer immediately prints your statement of classes.

Also, the invoices, however, often are printed using batch processing, meaning all student invoices are printed and mailed at a later date.

Notes Today, most transaction processing systems use online transaction processing. Some routine processing tasks such as calculating paychecks or printing invoices, however, are performed more effectively on a batch basis. For these activities, many organizations still use batch processing techniques.

1.4.6 Stationary and Non-stationary System

The operations and properties of a stationary system do not change significantly while those of a non-stationary system change with time.

Example: A computerized MIS is a stationary system because once designed, the MIS handles problems and provides information on a routine basis without any significant changes.

Example: An organizational system that tends to adapt to a changing environment is an example of a non-stationary system.

1.4.7 Adaptive and Non-adaptive System

Adaptive System tend to adapt to a changing environment while non-adaptive systems do not adapt.

Example: An organizational system is an adaptive system and a MIS system is a non-adaptive system.
Stationary system is always non-adaptive while non-stationary systems are adaptive systems.

1.5 System Development Strategies

After designing the input and output, the analyst begins developing the software using a programming language. This is the phase, when the programmers play their major role in development.

They start designing the data structures and writing of programs as per the documents prepared during design phase. So, this phase (phase design) can be categorized into two sub-phases:

- Database design: Database design is the most important aspect of developing a new system. As data is the basic component or raw material of any information system, it is needed to be ***stored*** in an organized way. How data has to be organized, depends on

the requirement specifications, hardware configurations the features of programming language and DBMS used. What is DBMS and how database can be organized and managed?

- Program design: Program design is mainly concerned with writing of programs (coding), editing of programs using a text editor or word processor, debugging and finally testing them. There is generally a team of programmers, who work under guidance of their project leader/systems analyst and do all the codings.

Two method-dependent strategies for systems development can be recognized. The first strategy depends on **methodology**; and the second on **technique**.

1.5.1 Unified Methodology Approach

Methodologies are a formal effort to address intricacy (complexity) by using standard, conventional strategies to systems development. Most general methodologies base disintegration on either **process** or **data**, or some combination of the two.

- The *procedure approach* to managing complexity is seen, for instance, in the structured techniques— structured analysis, design, and coding. The structured techniques all mainly use process decomposition, even though the important functions on structured analysis also included normalization of data as a secondary focus of the methodology.
- The *data approach* to managing complexity is observed in information engineering. It has its origins in the entity relationship strategy to modeling data.

The object-oriented strategy to managing intricacy considers both data and procedure as a package. An object is an essential of the problem's world, Consistent collection of data along with the procedures (methods or functions) operating on that data. The function of systems development by the object-oriented approach includes analysis and design of objects with analysis and design of the processes related to those objects.

Whether the systems developer utilizes a process, data, or object-oriented strategy, the methodology concerning the strategy will be consistent and organized. Such a methodology is termed here as "unified."

1.5.2 Technique Approach

Methodologies are, certainly, collections of related techniques. More detail methodologies consequences in recognizes techniques of unstable utility—some techniques are exceptionally important, some are comparatively valuable, and some have only minor value.

Example: A previous constituent of the structured techniques was the concept of a "Chief Programmer Team." Over the years, as it became obvious that this was not a victorious part of the structured techniques, that concept was removed.

Due to this inconsistency in the value of constituent methods, there are those who utilize collections of suitable techniques instead of unified methodologies. With this approach, systems developers are taught to use "best of practice" techniques that are known to have successes in solving enterprise problems.