System Analysis – Methods of Investigation

AdministratorSystem Analysis **Systems analysis** is a crucial stage in the **systems development life cycle**.

The development process of **information technology** systems or **ICT** systems is often described as the system development life cycle. This cycle includes all the stages involved in planning, investigating, development, implementation and maintenance of computer-based **information systems**.

System Analysis is that part of the development life cycle of a system, which involves the process of **investigating** current or new systems. It also involves **analyzing** and **understanding** the needs of users. Various **methods** are used for investigation and gathering of **data** and **information**. This job is usually carried out by the system analyst.

Methods of Investigation

The main methods used to carry out the investigations of a system are:

- Observation
- Interview
- Document Analysis
- Questionnaire

Observation
This method involves examining procedures as they are carried out. The analyst observes how work and procedures are carried out with the existing system, and this enables the analyst to witness first hand how the work is actually done and what it involves.

Interview
Interviewing is a face-to-face method used to gather facts directly from the users of the system under investigation. The interviewer will ask some specific questions in order to get useful information from the interviewee.

Document Analysis
The document analysis method involves examining existing **data**,
records, documentations as well as procedure manuals used for the existing system.
This method enables the analyst to obtain realistic and actual **information** about the system.

Questionnaire
The questionnaire consists of a standard set of questions. This may be distributed electronically – by email or via a network. It may also be paper based, in which case, it may be distributed to users by post.

The questionnaire would normally include different types of questions. For instance, open and close ended questions.
This technique is used to ask identical questions from the people using the system and perhaps when the information needed is not large, and there is a need to collect **information** from a large number of users.

Advantages and Disadvantages of Methods of Investigation

All the methods used for investigations outlined above
have **advantages** and **disadvantages**. The table below shows some major advantages
and disadvantages of each method.

Method	Advantage	Disadvantage
Observation	• Realistic Review • Actual methods of working and procedures can be observed • Data is collected in real time and tends to be more accurate	• Time consuming and expensive • Some problems that occur frequently may not take place at the time of observation • Direct observation may make people act in a different way
Interview	• Direct contact • Questions are flexible • Confidence of the interviewee can be gained and may enhance the quality of information gathered • Answers can easily be clarified	• Time consuming and expensive • Refusal to give useful information • Lack of skills on the part of the Interviewer may lead to inaccurate answers and insufficient information • Not suitable for collecting information for large number of users.
Document Analysis	• Ready made source of information. • Quick and faster way to gather information	• Insufficient documentation • Useful Documentation may not exist
Questionnaire	• standardization and uniformity of questions • Lack of personal contact (anonymous) • Suitable for facts and statistics (quantitative analysis)	• May be difficult to clarify problems • Ambiguous or vague answers • Incomplete answers • Return rate may be low • No direct contact