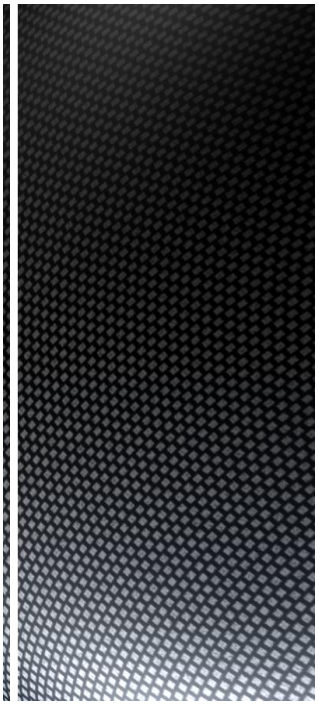
MIS
(Management Information System)

Sharif University of Technology

Session # 5

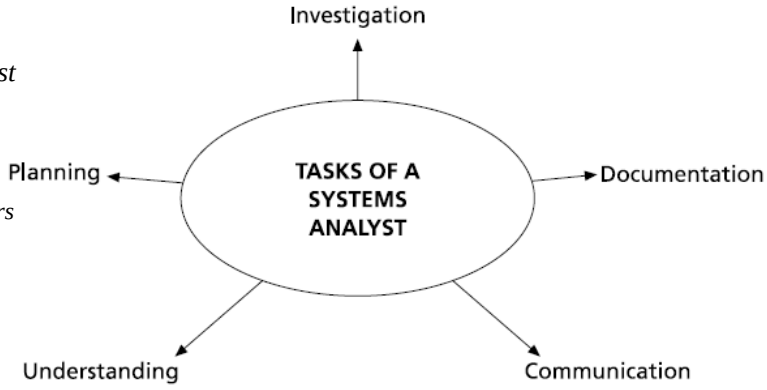


Session schedule

- *Contents*
  - *Systems Analysis and Design*
    - *Planning the approach*
    - *Asking questions and collecting data*
    - *Recording the information*
    - *Interpreting the information collected*
    - *Specifying the requirement*

Information system development

- *System Analysis*
  - *Five areas of a system analyst tasks:*
    - *Investigation*
    - *Communication with customers*
    - *Documentation*
    - *Understanding*
    - *Preparation & planning*



Information system development

- *System Analysis*
  - *System analysis process:*
    - *The PARIS Model*

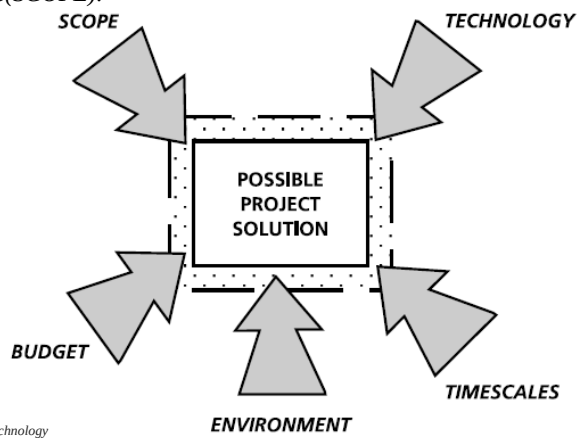
  Analysis can be considered to be a Five-stage process
    - *Planning the approach*
    - *Asking questions and collecting data*
    - *Recording the information*
    - *Interpreting the information collected*
    - *Specifying the requirement*

Information system development

- *System Analysis (Planning the approach)*
  - *Understanding the objectives and terms of reference*
    - *The main areas included in the terms of reference(SCOPE):*
      - *System boundary.*
      - *Constraints.*
      - *Objectives.*
      - *Permission.*
      - *End products.*

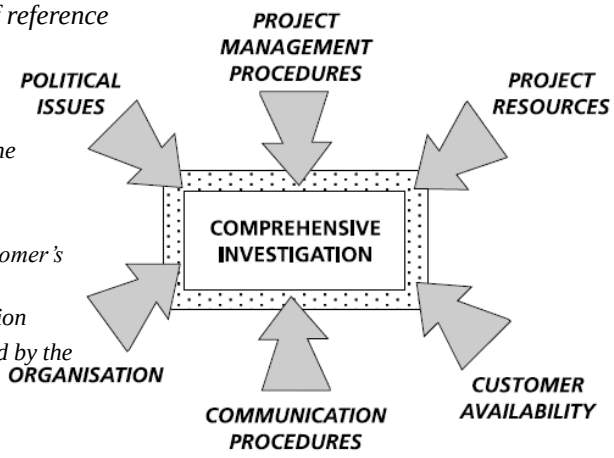
Information system development

- *System Analysis (Planning the approach)*
  - *Understanding the objectives and terms of reference*
    - *The main areas included in the terms of reference(SCOPE):*
      - *Constraints (customer):*
        - *Technology*
        - *Environment*
        - *Timescales*
        - *Budget*
        - *Scope*



Information system development

- System Analysis (Planning the approach)
  - Understanding the objectives and terms of reference
    - The main areas included in the terms of reference(SCOPE):
      - Constraints (analyst investigation):
        - The project resources available during the analysis
        - The availability of customer contacts
        - The political issues important in the customer's organization
        - The complexity and size of the organization
        - The project management procedures used by the project team
        - Communication procedures



Information system development

- System Analysis
  - Asking Questions and Collecting Data
    - In carrying out your investigation you will be collecting information about the current system,
    - Recording the problems and requirements described by users of the current system, a picture of the required system is built.
      - Details of inputs to and outputs from the system;
      - How information is stored;
      - Volumes and frequencies of data;
      - Any trends that can be identified;
      - Specific problems, with examples if possible, that are experienced by users.

Information system development

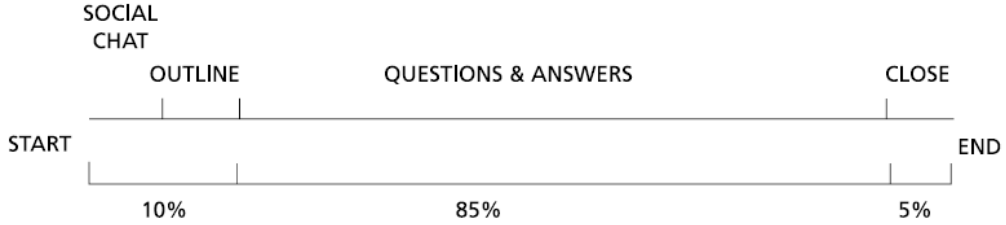
- *System Analysis*
  - *Asking Questions and Collecting Data*
    - *In order to collect this data and related information, a range of fact-finding methods can be used*
      - *Interviewing,*
      - *Questionnaires,*
      - *Observation ,*
      - *Searching records and document analysis*

Information system development

- *System Analysis*
  - *Asking Questions and Collecting Data (Fact-finding Interviews)*
    - *An interview can be defined as 'a conversation with a specific purpose'.*
    - *An interview is a form of two-way communication that requires a range of interpersonal skills to be used by the interviewer to ensure that the purpose is achieved.*
    - *In describing this fact-finding technique we shall look at three stages:*
      - *Planning,*
      - *Conducting and*
      - *Recording the interview.*

Information system development

- *System Analysis*
  - *Asking Questions and Collecting Data (Fact-finding Interviews)- Planning*
    - *Most fact-finding interviews follow a similar structure*



Information system development

- *System Analysis*
  - *Asking Questions and Collecting Data (Fact-finding Interviews) - Planning*
    - *Most fact-finding interviews follow a similar structure*

    - *Social chat*

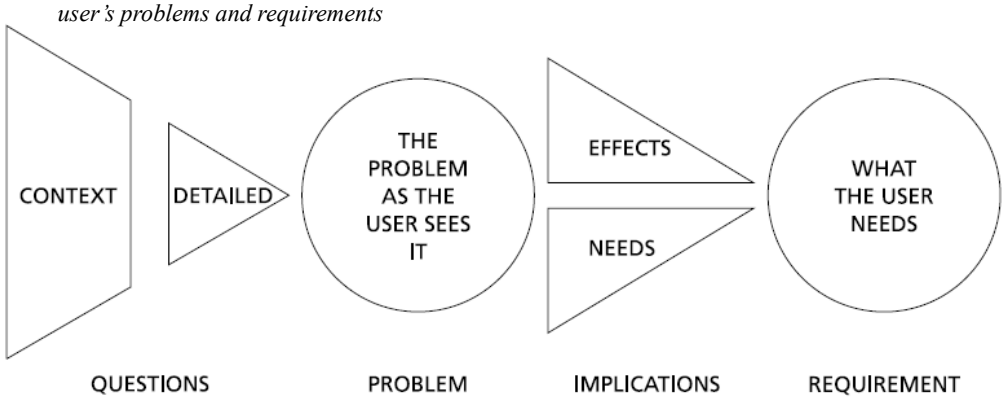
    An interview begins with a casual, friendly opening to create a relaxed atmosphere and put interviewees at their ease.

    - *Overview*

    Having created a relaxed atmosphere in the first stage of the interview, you now move on to outline what will happen next.

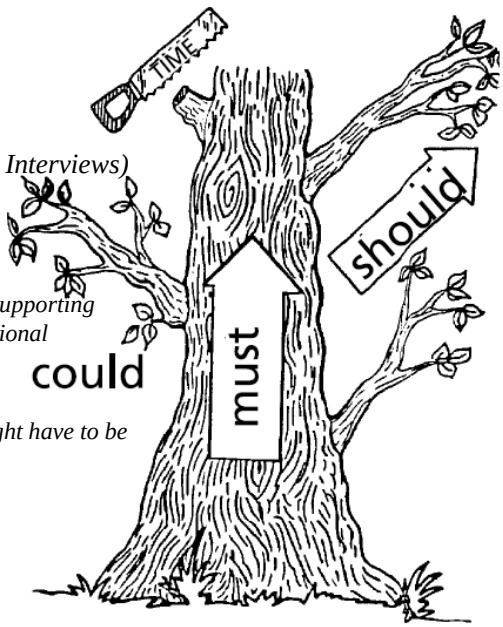
Information system development

- *System Analysis*
  - *Asking Questions and Collecting Data (Fact-finding Interviews) - Planning*
    - *There are four steps in questioning through the fact-finding process and providing information about the user's problems and requirements*



Information system development

- *System Analysis*
  - *Asking Questions and Collecting Data (Fact-finding Interviews)*
    - *The key fact-finding objectives – 'must find out' – form the trunk of the tree.*
    - *We can leave the trunk and go down the branches to get supporting information – 'should find out' – which will provide additional information about the key areas.*
    - *The saw in the diagram is a reminder that the agenda might have to be pruned if the available time is used up.*



Information system development

- *System Analysis*
  - *Asking Questions and Collecting Data (Fact-finding Interviews) - Planning*

Client premises	Analyst's office
Advantages	*Advantages*
Little inconvenience for client – no travel	Interviewer in control
Client will be relaxed	Interviewer more relaxed
Client will have information to hand	Client away from day-to-day pressures
Other client staff are available	Fewer interruptions, and privacy guaranteed
	Interviewer has information to hand
	Interviewer lays out room
Disadvantages	*Disadvantages*
Possible interruptions, e.g. phone, people or intercom	Other client staff are not readily available
Privacy not always possible, e.g. open plan	Client may not have all information to hand
Layout not always acceptable	Client may not feel relaxed
Analyst has no access to own information	More inconvenient for the client
Not as easy for interviewer to control	

15

Information system development

- *System Analysis*
  - *Asking Questions and Collecting Data (Fact-finding Interviews) - Conducting the Interview*
    - *In this section, we'll discuss two key skills*
      - *Listening and*
      - *Questioning*

      as well as the important issue of
      - *Control*

Information system development

- *System Analysis*
  - *Asking Questions and Collecting Data (Fact-finding Interviews) - Conducting the Interview*
    - *Listening*

To be effective listeners, analysts need to work on developing their skills in this area as well as on adopting an open, receptive attitude when engaged in listening.

'Active' listening has been defined as a set of techniques through which one person can obtain information from another.

It involves the listener communicating their interest and their understanding to the speaker, encouraging them to continue, and giving them the opportunity to talk without constant interruption

Information system development

- *System Analysis*
  - *Asking Questions and Collecting Data (Fact-finding Interviews) - Conducting the Interview*
    - *Questioning*

Asking the appropriate question to obtain the information required is a technique which is central to fact-finding interviewing.

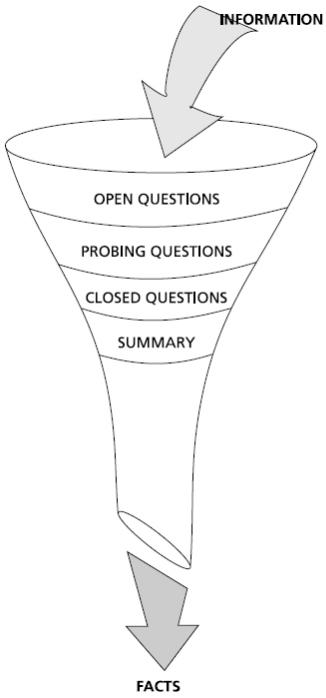
Different types of question elicit different types of response and are, therefore, used for different purposes.

Information system development

- *System Analysis*
  - *Asking Questions and Collecting Data (Fact-finding Interviews) - Conducting the Interview*
    - *Questioning- types of questions*
      - *Closed questions*
      - *Leading questions*
      - *Open questions*
      - *Link questions*
      - *Probing questions*
      - *Probing techniques*
      - *Reflection questions*
      - *Limited choice questions*

Information system development

- *System Analysis*
  - *Asking Questions and Collecting Data (Fact-finding Interviews) - Conducting the Interview*
    - *Questioning- types of questions*



Information system development

- *System Analysis*
  - *Asking Questions and Collecting Data (Fact-finding Interviews) - Conducting the Interview*
    - *Control*
      - *Signposting*
      - *Confirming*
      - *Summarizing*
      - *Note-taking*
      - *Listening*
      - *Pausing*

Information system development

- *System Analysis*
  - *Asking Questions and Collecting Data (Fact-finding Interviews) - Recording the interview*
    - *No matter how skilled the interviewer, or how good their questioning and listening, the interview is likely to be less than successful if the recording techniques are incomplete or inappropriate*
    - *A graphical technique can simplify the capture of this sort of information, but to be effective it must be simple and quick to use, and be easily understood by the interviewee so it can be checked for accuracy*
    - *The other recording task after the interview, although this one is not so urgent, is to prepare a formal record of it.*
      - *It is the official record of the interview, which can be accessed by others on the project*
      - *It is a document that can be checked by the interviewee to make sure it is accurate.*

Information system development

- *System Analysis*
  - *Asking Questions and Collecting Data (Fact-finding Interviews) - Recording the interview*

Title Interview record	System BBS	Document 2.1	Name CTS/IR 14	Sheet 1 of 2
Participants Pat Clarke, CTS Bookings Manager			**Date** 5th January 2003	
Objectives/Agenda To understand Pat Clarke's role, including details of procedures; to determine the problems encountered when using the current system; and to establish his requirements for a new system			**Location** CTS offices **Duration** 10.00am – 11.15am	
Results 1. BACKGROUND Pat Clarke has worked for Computer Training Services (CTS) since it was set up by the parent company, Industrial Services Ltd, in 1986. She is responsible for maintaining the booking system in CTS. Customers book courses, and PC keeps a record of these (on the bookings board), sends acknowledgements and joining instructions, deals with enquiries and cancellations, supervises resourcing of courses and prepares a monthly report for the Training Director. PC reports to the Training Director and has an assistant, Sandy Southgate, who is responsible for providing resources for scheduled courses. PC's role is central to CTS's booking and billing system and as the company has grown, so have Pat's responsibilities.				**Cross-reference** Doc. IR 14/1 Organisation Chart

Information system development

- *System Analysis*
  - *Asking Questions and Collecting Data (Questionnaires)*
    - *The use of a questionnaire helps to collect data from a lot of people without having to visit them all.*
    - *It is difficult to design a questionnaire that is both simple and comprehensive.*
    - *Also, unless the questions are kept short and clear, they may be misunderstood*
    - *A questionnaire may be the most effective method of fact-finding to collect a small amount of data from a lot of people*

Information system development

- *System Analysis*
  - *Asking Questions and Collecting Data (Questionnaires)*
    - *Designing a questionnaire*
      - *Heading section, which describes the purpose of the questionnaire and contains the main references – name, staff identification number, date, etc.;*
      - *Classification section for collecting information that can later be used for analyzing and summarizing the total data, such as age, sex, grade, job title, location;*
      - *Data section made up of questions designed to elicit the specific information being sought by the analyst.*

Information system development

- *System Analysis*
  - *Asking Questions and Collecting Data (Questionnaires)*
    - *Designing a questionnaire*

XYZ CO. LTD – DUTIES LIST		
SURNAME AND INITIALS		DATE FORM COMPLETED
YOUR JOB TITLE	DEPARTMENT	SECTION
Enter each main duty you perform, and indicate how many hours per week it requires–		

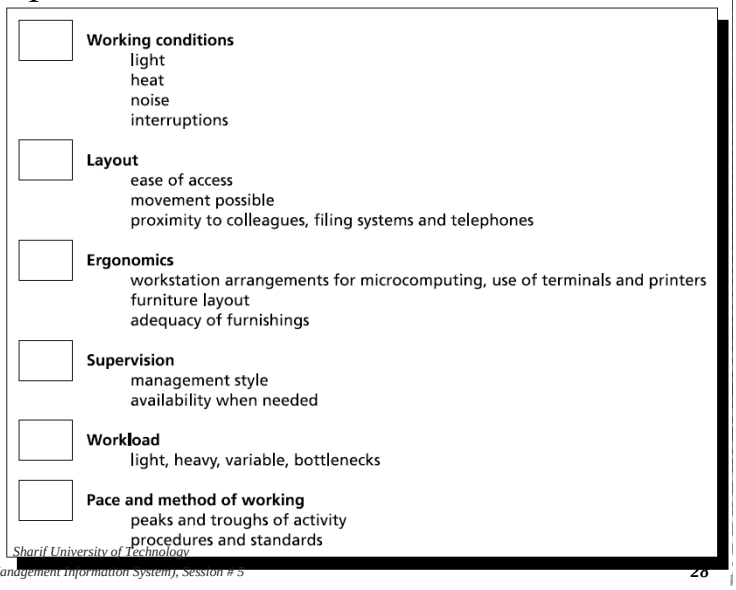
No.	DESCRIPTION OF DUTY	Approx. hours per week

Information system development

- *System Analysis*
  - *Asking Questions and Collecting Data (Observation)*
    - *The systems analyst is constantly observing, and observations often provide clues about why the current system is not functioning properly.*
    - *The analyst may also be involved in undertaking planned or conscious observations which will involve watching an operation for a period to see exactly what happens.*
    - *"Systematic activity sampling", involves making observations of a particular operation at predetermined times. The times are chosen initially by some random device, so that the staff carrying out the operation do not know in advance when they will next be under observation*

Information system development

- *System Analysis*
  - *Asking Questions and Collecting Data (Observation)*



Information system development

- *System Analysis*
  - *Asking Questions and Collecting Data (Record Searching)*
    - *Time constraints can prevent systems analysts from making as thorough an investigation of the current system as they might wish*
    - *"Record searching" involves looking through written records to obtain quantitative information, and to confirm or quantify information already supplied by user staff or management.*
    - *All of the information collected by record searching can be used to cross-check information given by users of the system.*
    - *Where there are a large number of documents, statistical sampling can be used.*

Information system development

- *System Analysis*
  - *Asking Questions and Collecting Data (Document Analysis)*
    - *"document analysis" is another fact-finding technique which is particularly powerful when used in combination with one or more of the other techniques described.*
    - *In order to fully understand the purpose of a document and its importance to the business, the analyst must ask questions about how, where, why and when it is used.*

Clerical Document Specification

N C C

Document description	System	Document	Name	Sheet
Purchase Order	POS	3	PUORD	1

Stationery ref.	Size	Number of parts	Method of preparation
DS 46	A4	4	Typed

Filing sequence	Medium	Prepared/maintained by
by order number	loose leaf binder	HO Admin

Frequency of preparation	Retention period	Location
as required	3 months after payment	HO Admin supervisor

	Minimum	Maximum	Av/Abs	Growth rate/fluctuations
Monthly VOLUME 5	20	300	120	no growth likely

Users/recipients	Purpose	Frequency of use
– HO Admin	Raise order	daily
– Purchase accounts	To check against supplier invoice	monthly
– Originator of order request	To check against delivery & authorise payment	weekly

Ref.	Item	Picture	Occurence	Value range	Source of data
1	Supplier name		1 per order		POR
2	Item to be ordered	9 (6)	5 per order	000001–999999	POR
3	Quantity of item	9 (6)	as ref 2	000001–999999	POR