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

- 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.

- 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

- 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

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.

- 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

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

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
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* 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
    • Control
    • Signposting
    • Confirming
    • Summarizing
    • Note-taking
    • Listening
    • Pausing

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

<table>
<thead>
<tr>
<th>Title</th>
<th>System BSS</th>
<th>Document</th>
<th>Name</th>
<th>Sheet</th>
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</thead>
<tbody>
<tr>
<td>Interview record</td>
<td>BBS</td>
<td>2.1</td>
<td>CTSBR 14</td>
<td>1 of 2</td>
</tr>
</tbody>
</table>

**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

**Cross-reference**: Doc. IR 14/1 Organisation Chart

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.

### 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.

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<table>
<thead>
<tr>
<th>XYZ CO. LTD – DUTIES LIST</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SURNAME AND INITIALS</strong></td>
</tr>
<tr>
<td><strong>YOUR JOB TITLE</strong></td>
</tr>
</tbody>
</table>

Enter each main duty you perform, and indicate how many hours per week it requires—

<table>
<thead>
<tr>
<th>No.</th>
<th>DESCRIPTION OF DUTY</th>
<th>Approx, hours per week</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>
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)

  - Working conditions
    - light
    - heat
    - noise
    - interruptions
  - Layout
    - ease of access
    - movement possible
    - proximity to colleagues, filing systems and telephones
  - Ergonomics
    - workstation arrangements for microcomputing, use of terminals and printers
    - furniture layout
    - adequacy of furnishings
  - Supervision
    - management style
    - availability when needed
  - Workload
    - light, heavy, variable, bottlenecks
  - Pace and method of working
    - peaks and troughs of activity
    - procedures and standards
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.

- 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.