

System Analysis and Design

Presented by

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Lecture 6

Fact-Finding Methods

- Sampling of existing documentation, forms, and databases.
- Research and site visits.
- Observation of the work environment.
- Questionnaires.
- Interviews.
- Prototyping.
- Joint requirements planning (JRP).
- Brainstorming

Observation

Observation – a fact-finding technique wherein the systems analyst either participates in or watches a person perform activities to learn about the system.

Advantages?

Disadvantages?

Work sampling - a fact-finding technique that involves a large number of observations taken at random intervals.



Observation Types

Passive Observations

Standing back, out of the way of the activity, and not engaging in the process would be passive observation. The analyst will just watch and take records without asking any questions to the operator or end users.

Active Observations

When the analyst gets involved in the process in some way, this is active observation. This can be in the form of asking questions between actions to get inside the action.

Advantages

- Data gathered can be very reliable
- Can see exactly what is being done in complex tasks
- Relatively inexpensive compared with other techniques
- Can do work measurements

Disadvantages

- People may perform differently when being observed
- Work observed may not be representative of normal conditions
- Timing can be inconvenient
- Interruptions
- Some tasks not always performed the same way
- May observe wrong way of doing things

Observation Guidelines

- Determine the who, what, where, when, why, and how of the observation.
- Obtain permission from appropriate supervisors.
- Inform those who will be observed of the purpose of the observation.
- Keep a low profile.
- Take notes.
- Review observation notes with appropriate individuals.
- Don't interrupt the individuals at work.
- Don't focus heavily on trivial activities.
- Don't make assumptions.

Observation Guidelines

- Figure out **what data to collect**, whether it's looking for events, inputs, pain points, documenting processes; your analyst needs to know what to look for
- Decide **how to make observations**, whether it be passive or active. We'll cover this more later
- Choose the best **time for observing the process**; you'll probably want to be present at a normal time and at peak operations to understand any stressors
- Pick a **method of data collection**, such as note taking, voice recording, or taking a video. Which one works best will depend on the process being observed

Secondary Research or Background Reading

This method is widely used for information gathering by accessing the gleaned information. It includes any previously gathered information used by the marketer from any internal or external source.

Secondary Research or Background Reading

Advantages

- It is more openly accessed with the availability of internet.
- It provides valuable information with low cost and time.
- It is used by the researcher to conclude if the research is worth it as it is available with procedures used and issues in collecting them.

Joint Requirements Planning (JRP)

Joint requirements planning (JRP) – a process whereby highly structured group meetings are conducted for the purpose of analyzing problems and defining requirements.

It is a **technique for drawing out user requirements through joint planning sessions of software users and information technology personnel**. These informal sessions are workshops that provide an open environment for people to discuss what they do, how they do it, and what critical information they need to support their job responsibilities. Written documentation defining these requirements results from a JRP session.

Steps to Plan a JRP Session

1. Selecting a location

- Away from workplace when possible
- Requires several rooms
- Equipped with tables, chairs, whiteboard, overhead projectors
- Needed computer equipment

2. Selecting the participants

- Each needs release from regular duties

3. Preparing the agenda

- Briefing documentation
- Agenda distributed before each session

Advantages of Joint Requirements Planning (JRP)

- Encouraging a **partnership of business and software experts**
- Enabling the business side to **identify and define their needs** of the software
- **Reducing design and development time** by clarifying software requirements up front
- **Driving software architecture** and platform decisions
- **Lowering deployment and maintenance costs** by resolving issues early in the system life cycle
- Improving the **quality of the solution** by combining the ideas of a variety of people
- Increasing end user and project team knowledge of the system and **satisfaction with the result**

Guidelines for Conducting a JRP Session

- Do not unreasonably deviate from the agenda
- Stay on schedule
- Ensure that the scribe is able to take notes
- Avoid the use of technical jargon
- Apply conflict resolution skills
- Allow for breaks
- Encourage group consensus
- Encourage user and management participation
- Make sure that attendees abide by the established ground rules for the session

Benefits of JRP

- JRP actively involves users and management in the development project (encouraging them to take “ownership” in the project).
- JRP reduces the amount of time required to develop systems.
- When JRP incorporates prototyping as a means for confirming requirements and obtaining design approvals, the benefits of prototyping are realized

JRP vs JAD

Both **Joint Application Development (JAD)** and **JRP** are techniques used to speed up the development process of a SW design. They are almost same except very few changes

- JRP doesn't include technical details it is about what is needed to complete the process successfully . But JAD includes technical details how it should be done.
- JRP is more concentrated towards the business process and typically its of shorter duration. But JAD includes building of UI prototype

Brainstorming

- Sometimes, one of the goals of a JRP session is to generate possible ideas to solve a problem.
 - **Brainstorming is a common approach that is used for this purpose.**

Brainstorming – a technique for generating ideas by encouraging participants to offer as many ideas as possible in a short period of time without any analysis until all the ideas have been exhausted.

Brainstorming Guidelines

- Isolate appropriate people in a place that free from distractions and interruptions.
- Make sure everyone understands purpose of the meeting.
- Appoint one person to record ideas.
- Remind everyone of brainstorming rules.
- Within a specified time period, team members call out their ideas as quickly as they can think of them.
- After group has run out of ideas and all ideas have been recorded, then and only then should ideas be evaluated.
- Refine, combine, and improve ideas generated earlier.

Time for
Questions

Thank you!



Discovery prototyping

- **Discovery prototyping** – the act of building a small-scale, representative or working model of the users' requirements in order to discover or verify those requirements.

Advantages

- Can experiment to develop understanding of how system might work
- Aids in determining feasibility and usefulness of system before development
- Serves as training mechanism
- Aids in building test plans and scenarios
- May minimize time spent on fact-finding

Disadvantages

- Developers may need to be trained in prototyping
- Users may develop unrealistic expectations
- Could extend development schedule