AMDARIS

ELICITATION TECHNIQUES

September 2019 | Olesea Oaserele

INVESTIGATION TECHNIQUES

- **Qualitative techniques – what is needed**
  - ➢ One to one sessions
    - o Interviews
    - o Observation
      - ▪ Formal observation
      - ▪ Protocol analysis
      - ▪ Shadowing
      - ▪ Ethnographic studies
  - ➢ Collaborative sessions
    - o Workshops
      - ▪ Discovery techniques
        - ✓ Round Robin
        - ✓ Brainstorming
        - ✓ Brainwriting
        - ✓ Post-it exercise
        - ✓ Stepwise refinement
        - ✓ Break-out groups
        - ✓ Hothouse workshop
      - ▪ Visualisation techniques
        - ✓ Process models
        - ✓ Rich pictures
        - ✓ Mind maps
        - ✓ Context diagrams
        - ✓ Task scenarios
        - ✓ User Stories
    - o Focus groups
  - ➢ Scenario
  - ➢ User analysis (Persona)
  - ➢ Prototyping

- **Quantitative techniques – volumes and frequencies**
  - o Surveys or questionnaires
  - o Special purpose records
  - o Activity sampling
  - o Document analysis

INTERVIEWS

OBJECTIVES

- Making initial contact with key stakeholders
- Developing a relationship with different business users
- Getting information about the current business situation
- Discovering existing issues and problems
- Discovering stakeholders perspectives and priorities over the business
- Discovering the stakeholder view over the requirements for the product to be built

AREAS TO BE CONSIDERED

Several areas to be considered during the requirements interview

- Current functionality of the product (if a product to be changed exists)
- Current problems and issues with operations (the need for change)
- The required change
  - Functionality to be created
  - Functionality to be amended

The required change is the tricky one, as the stakeholders have to analyse and think over something which doesn't exist yet. You have to be creative in asking the right questions and coming with right proposals.

ADVANTAGES

- Building a good relationship with the client and users
- Having good relationship with stakeholders from the beginning will allow more clean requirement elicitation process
- Interviews can yield the most important information and details
- Get an understanding on different viewpoints
- Discovering new, unknown areas
- Provide examples of artefacts and samples of data users need or use
- Offers insights on 'politics' in the company
- Offers information over the environment in which stakeholders are working

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DISADVANTAGES

- Interviews take a LOT of time
- Interviewing many people can become very expensive and cannot be sustained by the budget
- Having different and conflicting views from stakeholders could become a pain
- The need to identify real and 'political' conflicts in requirements
- Finding solution for the conflicts and gaps

PREPARATION FOR THE INTERVIEW

- The structure Who? Why? What? When? Where? will help to define the initial data for the interview
  - Who – define the list of people to be interviewed
  - Why – register the motives why each of the interviewee is considered important
  - What – register what information you plan to get
  - When – create an appointment for each interviewee in part
  - Where – reserve a space for each interview
- These categorisation looks obvious, but having them registered will help to organize your thoughts and plans.

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WHO? – BACK TO STAKEHOLDER IDENTIFICATION

- At the phase of stakeholder identification and prioritisation you'll identify who you need to interview
- Use the prioritisation to know who to start with (high priority - first)
- The level of authority of the interviewee will define the nature of questions and the information you can get from them (STOP hierarchy)
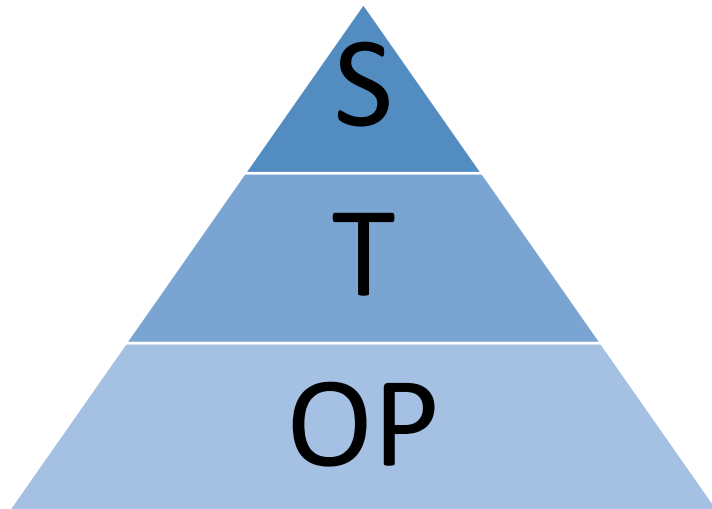
S – Strategic level – Top management

T – Tactical level – Middle management

OP – Operational level – Task performers in Departments

INFORMATION AND OBJECTIVES AT DIFFERENT LEVELS

Strategical level stakeholders
- Terms of reference
- Understand the need of management
- Agree the approaches for requirements management and other phases
- Ensure the process and requirements are aligned to business objectives

Tactical level stakeholders
- Performance issues
- Understanding targets and management control
- Setting KPIs
- Defining success factors and acceptance criteria
- Reporting requirements
- Understanding main processes and functions in departments
- Registering key tasks performers

Operational level stakeholders
- Accurate description of the situation at the moment
- Thorough description of the processes and tasks to be performed
- Information about source documents
- Information about the bottlenecks and their potential sources
- Actual flow of the work
- Ideas of improvement of the flow
- Volumes of the work

CONDUCTING THE INTERVIEW

The structure of an interview

Introduction and Setting the scene	Questions and Answers	Summaries and Next steps

Introduction
- Make personal introduction (amazing number of people forget this part)
- Make sure the interviewee received the agenda
- Explain the purpose of the project and the interview

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Question and Answers

- Start by a context of the information interviewee can provide
- Discuss the range of responsibilities related to the project
- Examine each relevant area of responsabilities
- Register any existing issues
- Register any possible improvement
- Take notes: text, diagrams, tables, flow charts, mind maps
- Record the discussion (<u>after asking and gaining permission</u>)
- Use Active listening techniques
- Ask many detalisation questions
- Repeat the ideas in order to confirm them
- Propose solutions at existing issues

Summaries and Next steps

- Summarise the points covered
- Summarise the agreed actions
- Explain next actions regarding requirements and project
- Send a summary of what was discussed and ask for confirmation
- Manage the stakeholders expectations by setting a plan for keeping them informed
- Establish the next meetings if needed
- In any case, make sure you left the 'door open' for any further collaboration

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FOLLOWING UP THE INTERVIEW

- Send meeting minutes (notes, diagrams, flow charts, …) as soon as possible, while the information is fresh in both heads.
- If the case, the interviewee will add details to the information sent. These should be added to the general document
- It is a good practice to review information elicited by this time and identify potential conflicts, collisions or gaps.
- Clarify and eliminate as many conflicts and gaps in information as possible
- Consolidate as much as possible the information from stakeholders after each interview

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OBSERVATION

TYPES OF OBSERVATIONS

- ➢ Formal observation
- ➢ Protocol analysis
- ➢ Shadowing
- ➢ Ethnographic studies

- Observation is an investigation process of observing the workplace and the staff carrying out their work.
- It is better to be done at early stages of requirements elicitations
- It is useful for obtaining information about the business environment and about work practices

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ADVANTAGES AND DISADVANTAGES

Advantages
- See the actual workplace and work practices
- Clarify areas of tacit information
- Obtain a better understanding of the problems of the business users
- Prepare appropriate questions for the next interviews
- Helps to devise more appropriate workable solutions

Disadvantages
- Observed people could change their usual practice
- Some people won't agree to be observed during their work

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FORMAL OBSERVATION

- Involves formalization and thorough documentation of the process
- Watching a specific task being performed
- Useful to understand the environment
- Staff members being observed should prepare beforehand
- Staff should be informed that this is NOT a performance assessment
- Questions and comments should NOT sound critical
- Task performers should NOT be distracted from their work, in order to preserve the right timings of the task
- Observe the same tasks many times, to identify exceptions and errors

Traps
- Business users can show you just a specific, standard practice without any variances
- If supposing that this is a performance review, business users can alter the real task performing to make it according to he rulebook

WORKSHOPS

ADVANTAGES AND DISADVANTAGES

Advantages
- Gain a broad view of the area under investigation
- Increase speed and productivity
- Obtain buy-in acceptance for the project
- Gain a consensus view or group agreement

Disadvantages
- Workshops are time consuming to prepare
- It's not easy to get all needed people together
- Sometime forceful participants will dominate the discussion
- Sometimes decisions are taken by one dominant figure in the room
- Difficult to ensure that participants have the required level of authority

PHASES OF THE WORKSHOP

- Preparation
- Facilitating a workshop
  - Techniques of facilitating
    - Round robin
    - Brainstorming
    - Brainwriting
    - Post-it exercises
    - Stepwise refinement
    - Breakout groups
  - Visualisation of the results
- Following the workshop

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PREPARING THE WORKSHOP

- Define the objective of the workshop
- Invite required people to participate at the workshop
- Determine the structure of the workshop
- Determine the techniques used for the workshop
- Arrange a suitable venue

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FACILITATING THE WORKSHOP

Workshops should start by discussing the objectives and it's aim is to secure all participants buy-in

When difficulties are anticipated, a senior manager could be invited which will be able to set the ground rules

Facilitator of the workshop has to make sure the discussions are kept towards achieving the set objective and are not derailing off the track

On the other part, facilitator should ensure that each participant is able to freely express their ideas or concerns

All ideas should be registered for later analysis, even those which are not related to the discussed subject. They will be useful for other parts of the requirements.

A good practice is to have a scribe taking notes, so that facilitator is focused on conducting the workshop to get the best outcomes

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WORKSHOP TECHNIQUES

Discovery techniques

Used to elicit information from the workshop participants.

- **Round robin** – participants are asked for their ideas in turn. Useful for encouraging to share their ideas those participants who are uncomfortable to shout out during brainstorming
- **Brainstorming** (idea storming) – participants are shouting out ideas about the discussed item. Scribe is registering ALL ideas which will be evaluated later. Useful for building ideas based on colleagues' ones
- **Brainwriting** – similar with brainstorming, but request participants to write down their ideas (each on a separate card) and put them in one place. Then every participant takes a card with an idea on it and add their own idea. This continues until no more ideas are generated. It is useful for overcoming the problem of 'shouting out' and still enables the participants to build their ideas on top of others.

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- **Post-it exercise** – involves writing down ideas on stickers, while working alone or in pairs. When everybody stopped writing. The stickers are put on a wall and facilitator is helping the whole team to group similar ideas and work on broader topics afterwards.
- **Stepwise refinement** – Facilitator takes an idea and keeps asking why on each answer, in this way getting to the root of a problem, idea or situation.
- **Breakout groups** – one or more small groups discuss a specific aspect and then report it to the other groups. Useful to manage large workshops.
- **Hothouse workshop** – a special type of workshop which involves iterative process of generating ideas in order to get a prototype for the product. It is very intense and can last for several days, often working over-night. It's useful to involve middle to executive levels, in order to have all decision factors in place.

Visualisation techniques

All gathered data during workshops are best described visually, as this will make sure the stakeholders understand the consolidated ideas clearly

o Process models

o Rich pictures

o Mind maps

o Context diagrams

o Task scenarios

o User Stories

These techniques will be discussed in detail during the lesson about **requirements specification and representation**.

FOCUS GROUPS

- Bringing together a group of people to with a common interest
- Mostly focused on research – business and market
- Used to people's attitude towards a business problem
- To elicit some ideas of future development to solve the problem
- Focus group can be external OR internal stakeholders
- Members of the Focus Group should represent a sample of the target constituency
- There is no intention to gain a consensus as is the aim of the workshops
- Focus group are a cost-effective way of getting views and ideas
- Focus group are unlikely to offer much in terms of design and tech
- The facilitator should make sure all the participants have their opinion expressed

SCENARIOS

- Telling the story of a task, transaction or process
- Useful when redesigning existing business processes
- Going through each step allows to rethink the tasks and redesign
- Provide a framework for discovering alternative paths
- Scenario includes
    - Business events that triggers the transaction
    - Action to be completed to get the expected outcome
    - Actors responsible of the tasks
    - Actors involved n the whole process
    - Preconditions – conditions to be 'true' before the scenario
    - Postconditions – conditions to be 'true' after completing all the steps
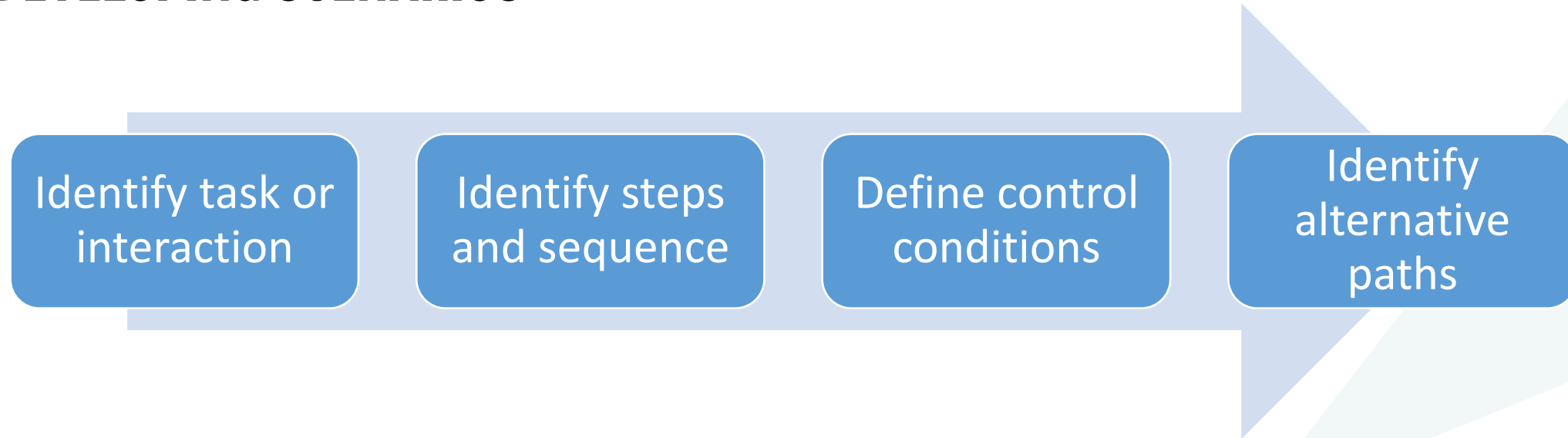
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ADVANTAGES AND DISADVANTAGES

Advantages

- Scenario removes the risk of omissions, as the analyst has to go through each step ant their transitions
- Ensures that all assumptions are verified and there aren't taken for granted information
- Addresses the problem of tacit knowledge and helps to transform it in explicit knowledge
- Helps visualizing all possible variations and situation by applying top-down approach
- Removes uncertainty
- Helps identify non-suitable paths and situations
- Provide a basis for development prototyping
- Provide a basis for test scripts

Disadvantages

- Scenario are very time-consuming
- Could become extremely complex
- Because of high complexity could imply some uncertainty during validation

DEVELOPING SCENARIOS

Identify task or interaction	Identify steps and sequence	Define control conditions	Identify alternative paths

- This process helps identifying the main path – the main success scenario – happy day scenario
- Alternative paths - Rainy days scenarios are very important too… sometimes more important than the main scenario
- Each alternative situation will go through the same process to uncover the whole alternative path

USER ANALYSIS

Persona

PERSONA

Let's remember from stakeholders lesson…

- A common way to represent user groups is the use of personas.
- Personas are fictitious individuals, representing typical user groups of the system with similar needs, goals, behaviors or attitudes.
- Personas are modeled from data collected about real users through user research.
- Personas can also be created based on raw data gathered by contextual inquiry, interviews, surveys
- If no relevant user research data is (yet) available, provisional personas, also called ad-hoc personas or proto-personas, can be created.
- Include all information you can think of. Later you will need almost all registered and some more

USER PERSONA EXAMPLE

USER PERSONA

John Doe

"I care deeply about animal rights and to help them live happier lives"

ABOUT

John is a graduate student at UCLA who cares deeply about animal rights. He spares his own time to volunteer at the local animal shelter and to promote pet adoption. He wishes to order some design artifacts to raise awareness at his school.

AGE	28
OCCUPATION	Ph.D Student
INCOME	Less than $50k
STATUS	Single
LOCATION	Los Angeles, CA

NEEDS

- Create designs that promote animal adoption
- Order design artifacts such as posters, badges and buttons to distribute them to students
- Help with the crowdfunding

FRUSTRATIONS

- Some vendors charge way too much for the designs
- Connecting with the local vendors require extra time on his end
- If he ends up not getting the funds, he has to put in his own money

SOCIAL MEDIA ACTIVITY

FACEBOOK

INSTAGRAM

TWITTER

SNAPCHAT
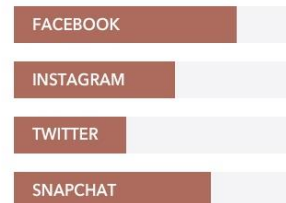
CURRENT FEELINGS

Stressed   Concerned   Busy

PERSONALITY

PASSIONATE   MOTIVATIONAL

GIVING   LOVING   OPTIMISTIC

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ADVANTAGES AND DISADVANTAGES

Advantages
- Helps in discovering who the actual user will be
- Knowing the user as a human will help to adjust the requirements to suit her/him
- Offer different views over the product depending on person types
- Offer alternative paths

Disadvantages
- Sometime the Persona is "too invented"
- Or Persona is created by someone too little related or involved into right business processes

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PROTOTYPING

An image replaces 1000 words…

Scenario can be a base for the prototype

Helpful at all stages of requirements management: Elicitation, Analisys, Documentation, Validation

Helps the stakeholders to envision the future product and produce more accurate requirements

Provide a basis for more detailed discussions

Prototype = simulation of a product and can be represented by:

- A rudimentary product (POC)
- Images
- Diagrams
- Wireframes
- Mock-ups
- Presentations

# ADVANTAGES AND DISADVANTAGES

Advantages
- Helps clarifying any uncertainty
- Helps the stakeholders identify new requirements
- By presenting the look and feel can help to elicit usability requirements
- Helps to validate the requirements
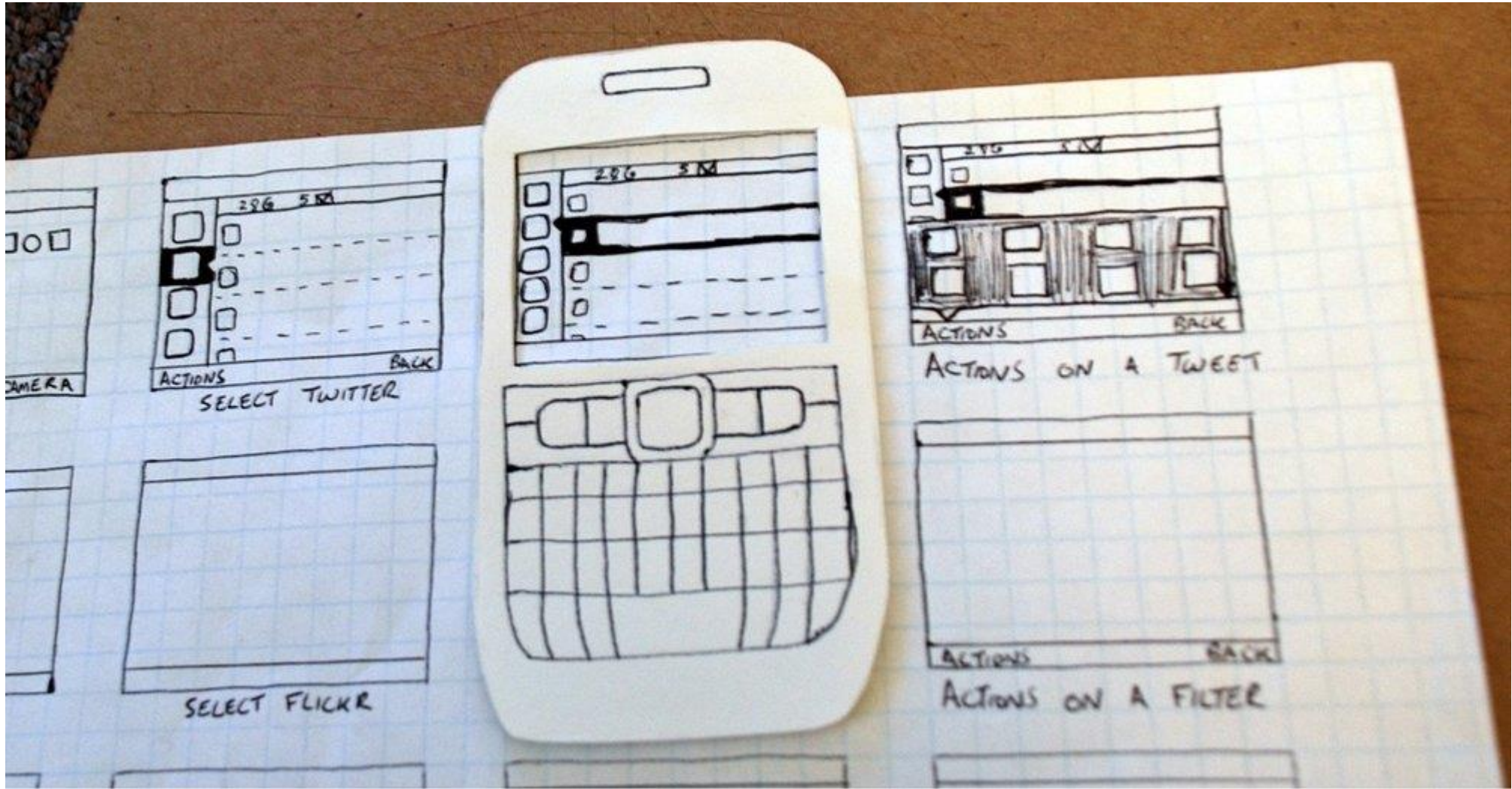- Helps to identify errors

Disadvantages
- Without proper management, prototyping can take too much time and never end
- Some user can consider the prototype as a working system
- User expectation can be exceedingly raise if not specifying the drawbacks of the real built system

PROTOTYPE EXAMPLES
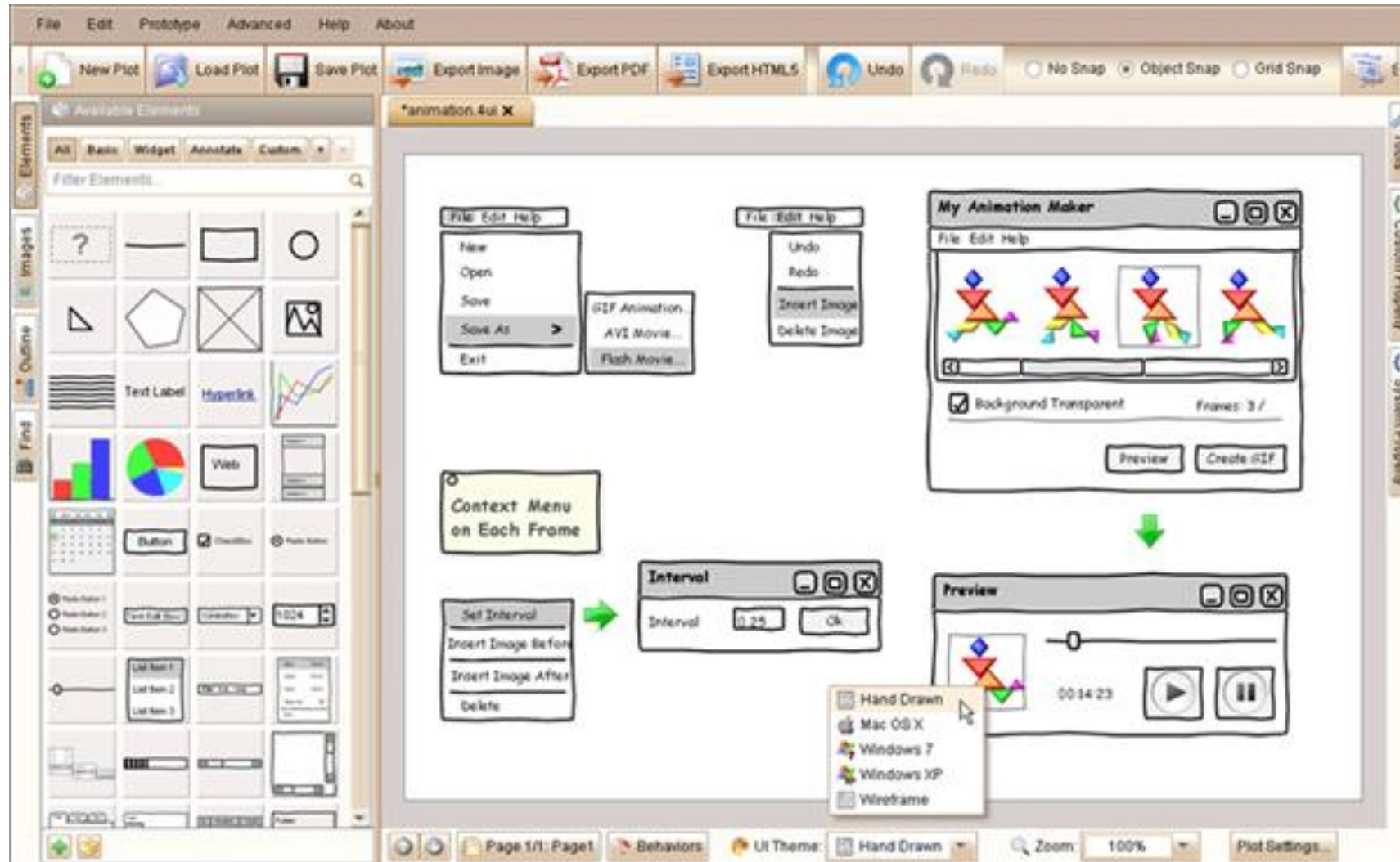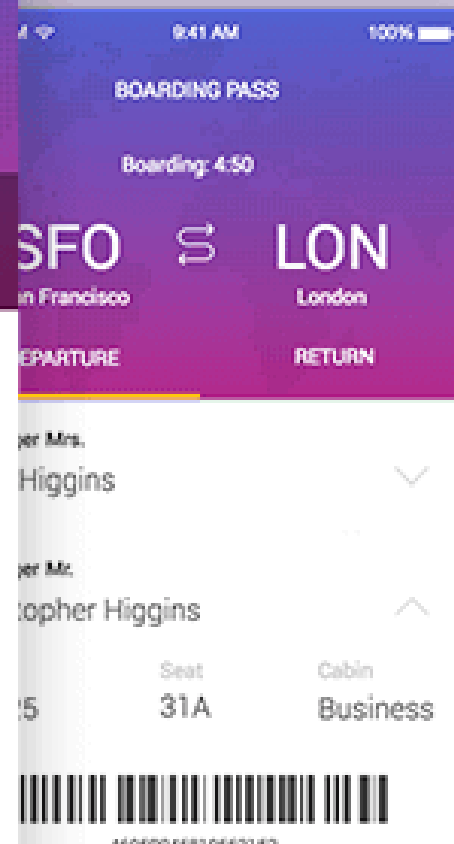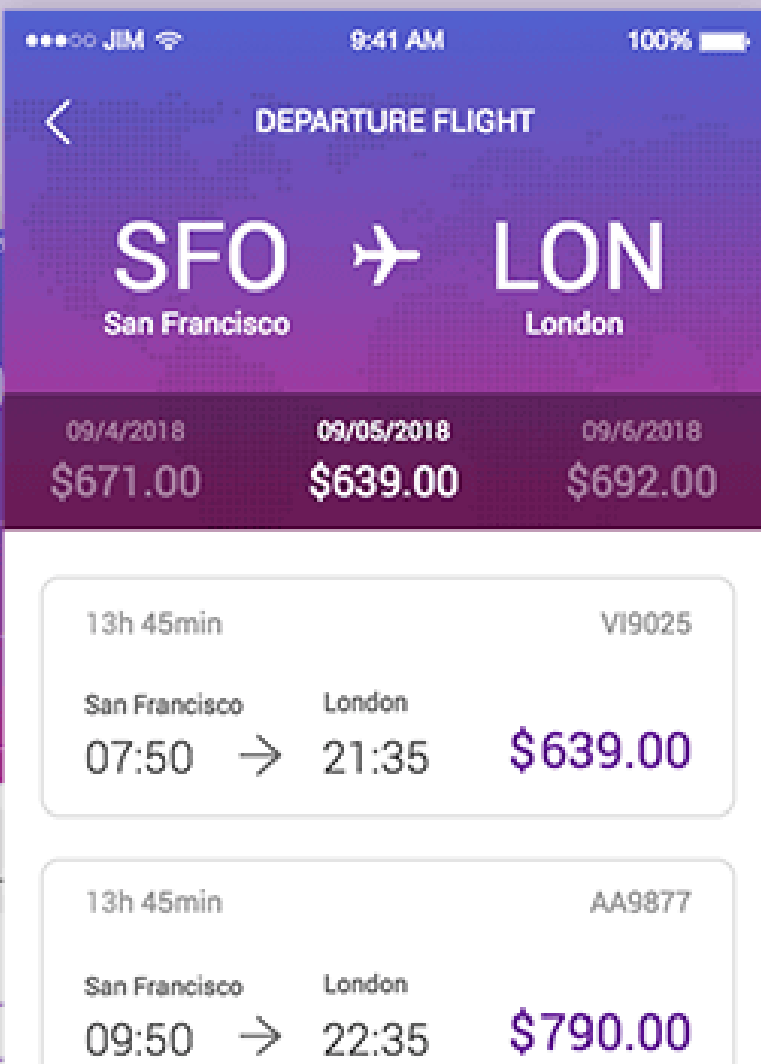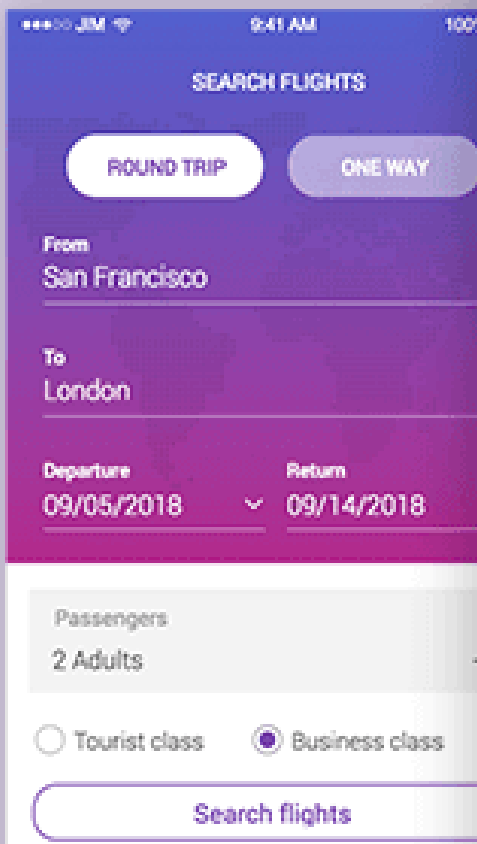
QUANTITATIVE TECHNIQUES

SURVEYS OR QUESTIONNAIRES

Used to get a limited amount of information from a large number of people with limited budget

Survey structure:

- Heading section
    - Explains the purpose of the survey
    - Gives instructions regarding filling the survey, time frame, responsible person,…
    - Describes the rationale of the survey
- Classification section
    - Captures the details about the respondent
    - Provides the basis for categorization the respondents by age, gender, type of activity and other
- Data section
    - Main body of the survey, including all the questions

Tips

- Phrasing of he questions and answer options should be very carefully thought of, otherwise you'll end up with irrelevant answers
- Questions have to be unambiguous and allow straightforward answers
- Structure questions in groups where possible
- Design the survey in such a way that you can easily extract data, observe patterns, create charts,…
- If survey is not imposed by an authority, you'll have to explain the benefits for the respondents so that they will be more willing to find time and fill it in
- If there are controversial questions included and you have to create an anonymous survey, the classification of the respondents will not be possible, as the questions related to the person will have to be excluded

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SPECIAL PURPOSE RECORDS

Special purpose records are data-gathering forms used for recording any tasks and actions done by different users

They can be completed by analyst during the observation sessions or by the business user over a period of time

Analyst can spend some time shadowing a business user and fill a the special purpose records

Special records can contain

- Steps to be performed in a process
- Volumes of data to be processed (ex. Nr of requests from the clients)
- Frequency of the data (ex. How often the business user receives requests form the clients)
- Type of the data(ex. What type of requests are received)

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ACTIVITY SAMPLING

A form of observation used when it is necessary to know how people divide their work time among a range of activities
Steps to perform activity sampling
1. Identify the activities to be recorded. The lst should include the idle (not working) or any other not-related activities
2. Decide on the frequency of completing the sampling
3. Visit the study group and take notes of all studied activities
4. Record the results
5. Analyse the results (after a period of recording samples of activity)

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DOCUMENT ANALISYS

Reviewing samples of source documents to uncover information about an organization, process or system

What can be analysed for each document

- How is the document completed?
- Who completes the document?
- What are the validations and controls on the document?
- Who uses the document?
- How many documents of this type are produced?
- How long the document is retained?
- What are the detailed information in the document?
- Where is the data obtained?
- Are there any redundant data in the documents?

SUITABILITY OF TECHNIQUES

Investigation techniques	Understanding the situation	Waterfall requirements elicitation	Agile requirements elicitation
Interview	VS	VS	VS
Observation	VS	VS	S
Shadowing	VS	VS	S
Workshop	VS	VS	VS
Hohousing	S	N	VS
Scenario analysis	S	VS	VS
Prototyping	S	VS	VS
Questionnaires	VS	VS	N
Special purpose records	VS	VS	N
Activity sampling	VS	VS	N
Document analysis	VS	VS	N

VS – Very Suitable   S – Suitable   N – Non Suitable

THANK YOU

AMDARIS