



Information Gathering Methods

Department of Computer Science | Software Requirements and Design

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Content

Information gathering methods

1. Interviews
2. Prototype interviews
3. Observation
4. Surveys using questionnaires
5. Other methods
 - Meetings
 - Workshops
 - Review existing reports, form and procedure descriptions

- Reading material:
 - Chapter 8 – Interaction Design



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Five key issues for data gathering

1. **Setting goals**
 - The goal influences the data gathering and the analysis
2. **Identifying participants**
 - Decide who to gather data from
3. **Relationship with participants**
 - Clear and professional
 - Informed consent when appropriate
4. **Triangulation**
 - Look at data from more than one perspective
5. **Pilot studies**
 - Small trial of main study



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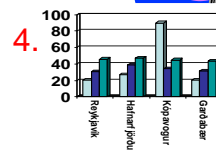
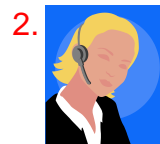
4 Steps for information gathering

Four steps:

1. Preparation
2. Gather the data
3. Analyse the data
4. Describe the data

Example: Telephone interview

1. Prepare the survey
2. Conduct a survey
3. Calculate the results
4. Report the results



Information gathering methods

1. Interviews
2. Prototype Interviews
3. Observation
4. Questionnaires
5. Other information gathering methods
 - Meetings
 - Workshops
 - Review existing reports, form and procedure descriptions



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1. Interviews



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Interviews – three types

- Unstructured
 - are not directed by a script (list of questions).
 - Rich but not replicable.
 - People sit down and start to talk – in the flow
- Structured
 - are tightly scripted, often like a questionnaire.
 - Like when someone asks you to take part in a opinion measurement
 - Replicable but may lack richness.
- Semi-structured
 - guided by a script but interesting issues can be explored in more depth
 - Can provide a good balance between richness and replicability.
- The main difference is
 - how much flexibility there is in the interview



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Interview strategies – Fully structured interview

- Rigid script to present questions in a well-defined order
- No room for asking questions out of order
 - or for adding questions not found in the pre-defined interview script
- Though different from survey
 - because there is space for more in-depth answers
- Relatively easy to analyze
- The motivation
 - to ensure that each interviewee is asked the same questions
 - Then you can not add new ones during the interview



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Semi structured interview

- Room for asking for clarification, add question or follow interviewee comments
- You have a set of question
 - Similar to the fully structured interview
- But you can feel free to let the conversation go where it may
 - „tell me more about that....“
 - „how does this relate to...“
- The goal is to dig through the interviewee's comments
 - To gain additional insight and understanding



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Unstructured interviews

- Based on a list of topics or questions known as an interview guide
- Start with an initial question
 - Listen and let the interviewee respond
 - When the conversation slows start with a new topic
- Opens up the possibility of exploring topics in a depth and breadth
 - Requires more skill to conduct
 - More challenges in interpretation
- The interviewee is in control
 - Informant or non-directive interviews



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Enriching the interview process

- Sometimes the interview is enriched with props
 - devices for prompting interviewee, e.g., a scenario or a persona



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How should you choose?

- Fully structured appropriate
 - Hope to compare responses across individuals
- Semi structured or unstructured
 - Looking to dig deeper, in search of critical comments, design requirements or other insights
- Fully structured interviews best as the first effort
 - Easier to conduct and analyze



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Pros and Cons of Interviews

- Pros
 - The ability to „Go deep“
 - Interviewees can provide detailed responses
 - The ability to gather data that would otherwise be hard to capture
 - Encourage reflection and consideration
 - Can be extremely flexible
- Cons
 - Challenging of managing potentially unbounded discussions
 - It's hard work
 - Limited to relatively small number of participants
 - Suffer from problems of recall



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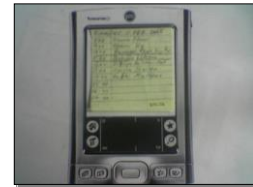
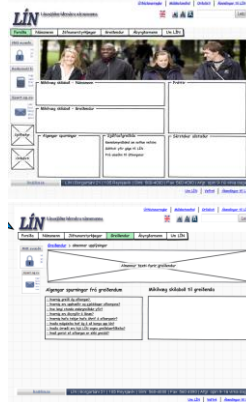
2. Prototype Interviews



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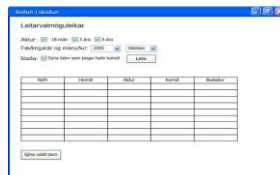
Prototypes

- Prototype is an initial, working model
 - of a larger more complex entity
 - Often used to gather information on requirements

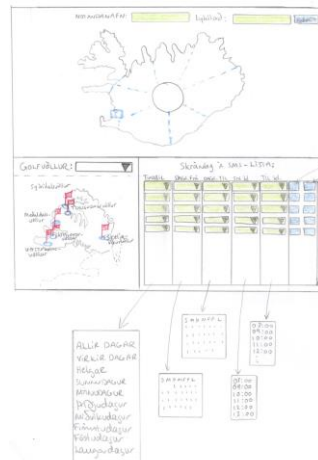


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Design prototypes - Millihönnun



SKRÁ SÍG Á SMS-LISTA



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Prototype Interviews

- Informal evaluation session
 - The goal is to observe the user using the low-fi prototype
 - One user at a time
- To gather feedback on the UI
 - Does it fit the users needs?
 - Is if the requirement analysis is right?
 - Is the UI well designed and usable?
- The conductor can suggest changes to the interface
 - According to the users reaction
 - They change the prototype in collaboration



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Prototype Interviews vs. Interviews

- In prototype interview there is a prototype in front of the user
 - Not in a standard interview
- The user is asked to “solve” task in the prototype
 - Not in a standard interview
- The user is asked questions in both cases
 - But often the prototype is used to guide the discussion in the prototype interview
- The prototype interview is a combination of
 - Observation of the users behaviour AND interviewing



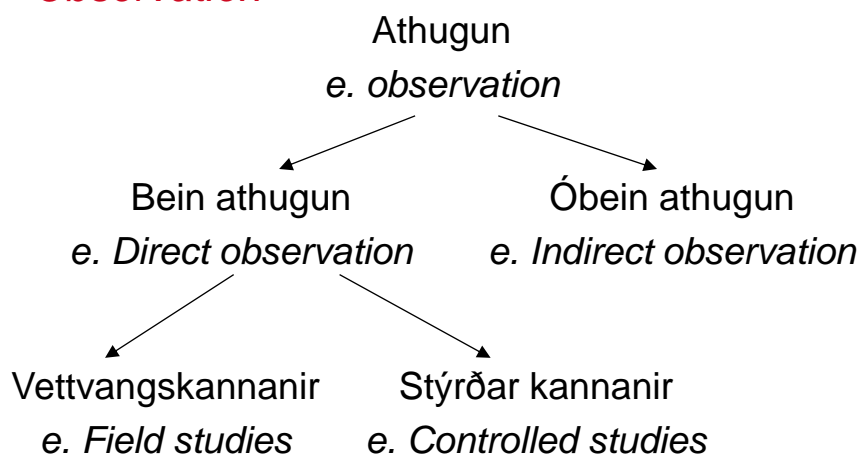
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3. Observation



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Observation



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Direct observation Bein athugun

- One person observes the user
- Writes notes
 - Does not want to disturb the user



- The user uses the system to solve predefined tasks
- Very good to understand how the system is used
- Takes a lot of time but gives extensive data



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Direct observation

- Divided into
 - Field studies (Vettvangskannanir)
 - Controlled studies (Stýrðar kannanir)
- Field studies
 - The user does his daily tasks in his own environment
 - Work place or at home
 - The observer notes important issues
- Controlled studies
 - The user is observed solving predefined tasks
 - Often in a usability lab
 - Sometimes one conductor and one observer
 - Often precise data gathering, time, mouse clicks, etc.
 - Often called: user testing



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Direct observation – Bein athugun

- Very extensive results
- Has its limitations
 - We meet the user only once
 - We affect the user
 - The data is biased towards what the observers thinks is important
 - Sometime we videotape the test session
 - Sound, video or recorded in the computer
- Good to use when describing the requirements



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Indirect observation – Óbein athugun

- Also called remote unmoderated testing
- The usage is recorded
 - Video or logged in the computer
 - Nobody is observing
- Huge amount of data
 - That we need to analyse
- The observer does not affect the user
- Have to plan it very well in advance
 - What is your goal, what data do you need



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4. Survey using questionnaires



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Survey using questionnaires

- *Könnun með spurningalistum*
- We are doing a survey
 - Questionnaire is the tool
- Questionnaires are answered privately
- More structure than in interviews
- A questionnaire has a particular goal
 - Questions for gather data on particular knowledge
- Both on paper and web
- Pros:
 - Very easy to access many people
- Cons:
 - Sometime not that good response rate

Forkönnun.

Vinsamlegast lesið eftirfarandi þakka þér kærlega fyrir að taka þátt í þessum notendaprófunum. Þessi könnun er framkvæmd af starfsmönnum Háskólans í Reykjavík og Háskóla Íslands. Hún er lögur í samstarfi Háskóla og Skóla um mýrar leifir við uninnsku niðurstöðu úr notendaprófunum. Einn þáttur í þessum verkfæri er að safna upplýsingum um hvernig þú ert með þessu Vinnustöðu nýst notendum við vinnu sína. Mundu að það er kortið gætt verðir er að meta ekki þín kunnáttu.

Nafnið þitt hefur á öllum þeim upplýsingum er þú hefur í tö.

Persónuupplýsingar

1. Hver er þitt stöðuvæðing?

2. Hver er lengi hefur þú gengið þessi í stöðu?
☐ 0-1 ár ☐ 2-3 ár ☐ 4-6 ár ☐ 7-10 ár ☐ 11-14 ár ☐ 15+

3. Hver er lengi hefur þú starfað hjá Skóla?
☐ 0-1 ár ☐ 2-3 ár ☐ 4-6 ár ☐ 7-10 ár ☐ 11-14 ár ☐ 15+

4. Aldur:
☐ 0-19 ☐ 20-29 ☐ 30-39 ☐ 40-49 ☐ 50+

5. Kyn:
☐ Kvenkyns ☐ Karlkyns

Tölvukunnáttu

6. Hver er lengi hefur þú notað tölvu (PCs, Mac, o.s.frv.)?
☐ 0-1 ár ☐ 2-3 ár ☐ 4-6 ár ☐ 7-10 ár ☐ 11-14 ár ☐ 15+

7. Hver er mikið á dag að meðaltali notar þú tölvu?
☐ 0-59 mín. ☐ 1-2 klst. ☐ 3-4 klst. ☐ 5-6 klst. ☐ 6-7 klst. ☐ 8+

8. Tala þú þig veris mikið við tölvukunnáttu?
☐ Þessum ☐ Óþessum ☐ Sérþæfing

9. Hvar notar þú tölvu? (mættu allt sem á við)
☐ Heima ☐ Vinnu ☐ Annars

10. Hver er lengi hefur þú notað Vinnustöðu?
☐ Minna en mánuð ☐ 1 mánuð ☐ 1-2 ár ☐ 2-3 ár ☐ Meira en 3 ár

11. Hvaða kerfi notar þú reglulega í vinnunni?
☐ Windows ☐ Mac OS ☐ Linux ☐ Annars

12. Hvaða kerfi notar þú reglulega heima?
☐ Windows ☐ Mac OS ☐ Linux ☐ Annars

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Two types of questions

- Closed questions
 - Choices
 - Yes/No questions
 - Particular choices
 - Always don't know/
 - Does not apply
 - Sometime we use scale
 - Often 5 or 7 possibilities
 - Have to be opposites
 - Sometime likert scale
 - You respond to a statement
 - The respondent tells you if he agrees or disagrees
- Open questions

How do you..., What ways are there..., What do you do to

 - Harder to analyses those

	1	2	3	4	5	6	7	RA
1. Overall, I am satisfied with how easy it is to use systems.	DISAGREE	c	c	c	c	c	c	AGREE
2. It was simple to use systems.	DISAGREE	c	c	c	c	c	c	AGREE
3. I can efficiently complete my work using systems.	DISAGREE	c	c	c	c	c	c	AGREE
4. I am able to complete my work quickly using systems.	DISAGREE	c	c	c	c	c	c	AGREE
5. I am able to efficiently complete my work using systems.	DISAGREE	c	c	c	c	c	c	AGREE
6. I find comfortable using systems.	DISAGREE	c	c	c	c	c	c	AGREE
7. It was easy to learn to use systems.	DISAGREE	c	c	c	c	c	c	AGREE
8. I believe I can use predictive quality using systems.	DISAGREE	c	c	c	c	c	c	AGREE
9. Systems gives error messages that clearly tell me how to fix problems.	DISAGREE	c	c	c	c	c	c	AGREE
10. Whenever I make a mistake using systems, I recover easily and quickly.	DISAGREE	c	c	c	c	c	c	AGREE
11. The information I read in online help, on-screen messages, and other documents provided with systems is clear.	DISAGREE	c	c	c	c	c	c	AGREE
12. It was easy to find the information I needed.	DISAGREE	c	c	c	c	c	c	AGREE
13. The information provided for systems is easy to understand.	DISAGREE	c	c	c	c	c	c	AGREE
14. The information is effective in helping me complete the tasks and requests.	DISAGREE	c	c	c	c	c	c	AGREE
15. The organization of information in systems seems to flow.	DISAGREE	c	c	c	c	c	c	AGREE
16. The interface of systems is pleasant.	DISAGREE	c	c	c	c	c	c	AGREE
17. I like using the interface of systems.	DISAGREE	c	c	c	c	c	c	AGREE
18. Systems has all the features and capabilities I expect it to have.	DISAGREE	c	c	c	c	c	c	AGREE
19. Overall, I am satisfied with systems.	DISAGREE	c	c	c	c	c	c	AGREE
	1	2	3	4	5	6	7	RA


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ENDURMENNTUN Háskóla Íslands

Viltu hjálpa okkur að gera vef ENDURMENNTUNAR HÍ betri með því að svara nokkrum spurningum? Það tekur aðeins 2-3 mínútur að svara.

Bestu þakki!

[Alta / lag](#)

0 of 12 svarab

1. Í hvaða tilgangi heimsóttir þú vefinn mína?

☐ Almennar upplýsingar um EHÍ

☐ Skoða frambud námskeiða

☐ Skoða námskeið á næstunni

☒ Skoða áæðfðin námskeið

☐ Skoða námsbraut/ir

☐ Skoða náms- og starfsráðgjöf

Annað, hvað?

[Alta / lag](#)

0 of 12 svarab

4. Hversu ánægður ertu með vefinn?

Hög ánægður Þegar ánægður Hósti Þegar ánægður Hög ánægður

Viltu útskýra svarið?

[Alta / lag](#)

3 of 12 svarab

5. Gefðu vefnum einkunn

Litgur 1 2 3 4 5 6 7 8 9 10 - Þessir

[Alta / lag](#)

4 of 12 svarab


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[illegible]

When designing a questionnaire

- Have to be well designed
 - A boring questionnaire will not get any response
- The questions have to be simple
 - As few as possible
 - Not more then 2 A4 pages
 - Clear questions and not ambiguous
 - The users can not ask you about the questions
 - The questions should collect data that you need
 - Leave space for comments
 - “Some other comments?”
- Very important to test the questionnaire well

5. Other information gathering methods



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Meetings

- What is it?
 - People gather for a short period of time (often one hour) at the same place
- Why do it?
 - Discuss issues that need to be decided
- When to do it?
 - When you need information from users
- How to do it?
 - It is vital to have the information being discussed visible for all participants, fx. by using a projector
 - You could bring prototypes, or visions, or other material to gather feedback during the meeting



Research shows

- This is one of the most frequently used methods to contact users

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Workshops

- What is it?
 - a meeting at which a group of people engage in intensive discussion and activity on a particular subject or project
 - Walking the wall during class was actually a workshop
- Why do it?
 - To gather feedback from users and get them involved in the development of the product
- When to do it?
 - Often in the early phases of design and understanding
- How to do it?
 - It is often a three hour activity with one conductor planning and scheduling the activities and managing the event
- Research shows
 - One of the most frequently used methods in industry to involve users
 - Is rated highly as a good method to involve users



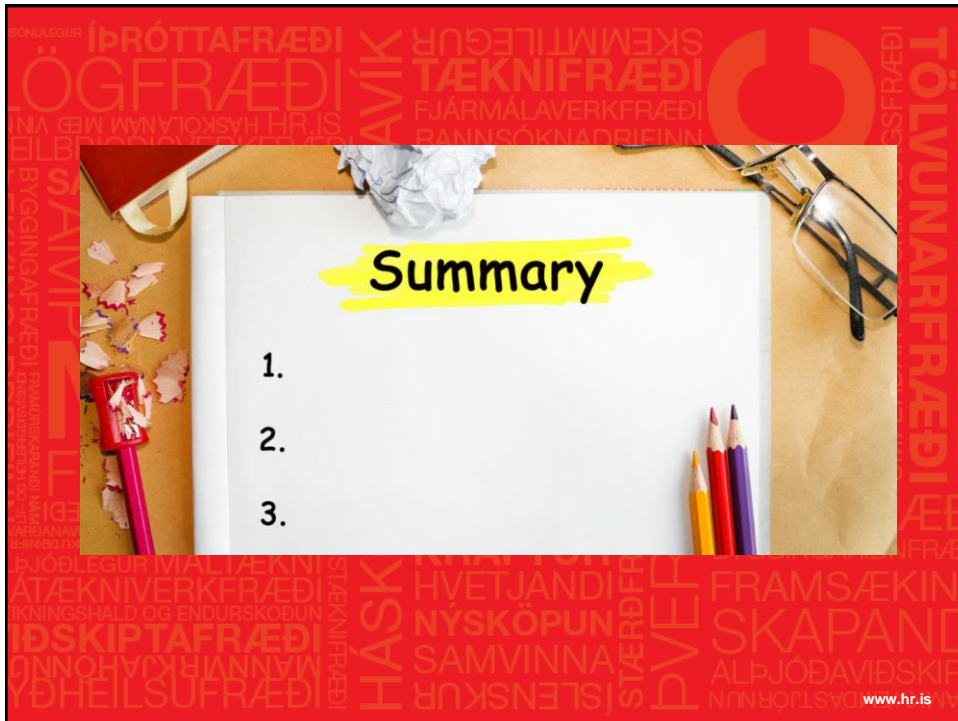
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Review exististing documentation

- External to the organization
 - Sometimes “best practices” studies
- Within the organization
 - Reports, forms and procedure descriptions
- Some ways to use the documentation:
 1. Provide copies of the current documentation to review
 2. Use the documents in the interviews as visual aid
 - Good to have forms that have been filled out
 3. Aid to define business rules



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Information gathering methods

- We have covered
 - Interviews
 - Prototype interviews
 - Observation
 - Questionnaires
 - Other
 - Meetings
 - Workshops
 - Review existing reports, form and procedure descriptions



Select method according the information we need



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How do we use this information?

- To have better understanding
 - of the use of the new system
 - Of the needs of the users
- Use it for requirement analysis
 - To state requirements
 - By user stories
 - Requirement list
 - Get information for use cases
- Use it for design
 - Designing the user interface
 - Redesigning based on the user feedback
 - Modeling classes and objects



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