Analysing Users and Goals

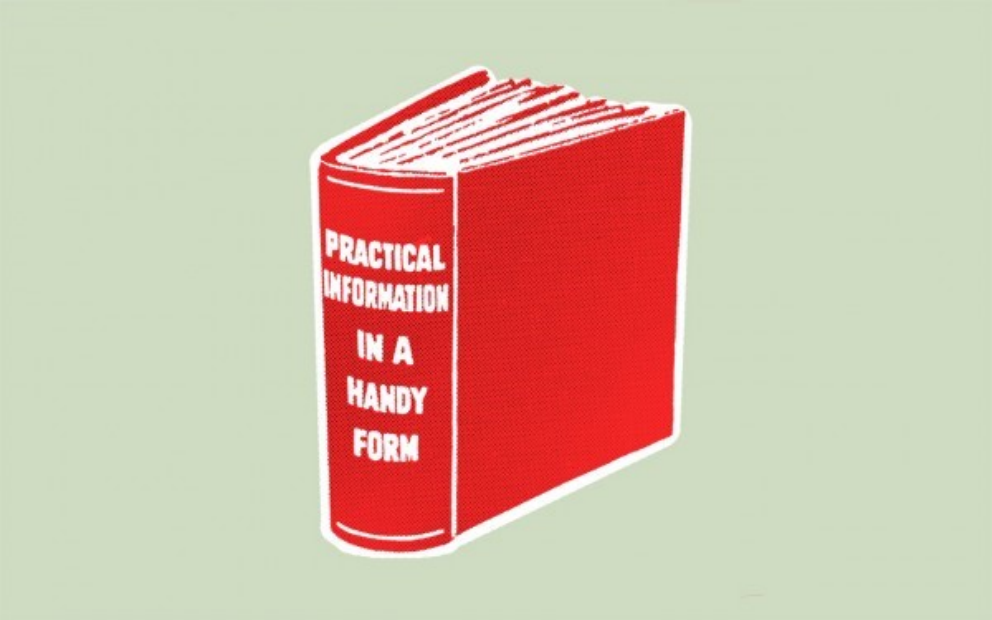
School of Computer Science | Software Requirements and Design
Marta Kristín Lárusdóttir, January, 18, 2015

Content

- Practical Information
- User Centred Analysis
- Examples of User Group Analysis
- Describing User Goals

- Reading
  - Chapter 5, pg. 110 - 114

Practical Information



Last week:

- The Importance of Requirement Analysis
- The Importance of the User Focus
- HCI, System Analysis and other disciplines
- Stakeholders are:
  - primary source of information for system requirements
  - people who have an interest in the successful implementation of the system
  - Are spilt into specific categories

This week

- There will be Project Classes (dæmatímar) tomorrow
  - The first assignment
  - You are able to do those at home or during class
- The lectures today will cover the methods you use in the project class
- We will discuss the Hand-in assignment Wednesday
  - Go through analysing web sites

User Centered Analysis

Assignment 1

- Emphasising
  - Comparing Web sites (Bera saman vefsíður)
    - State the benefits, drawbacks and what you can use from the design
    - We will cover this next Wednesday
  - **Analysing user groups (Greina notendahópa)**
    - **Analyse the background, use of the system, Context, main tasks, Importance**
  - Requirement list (Kröfulisti) and analysis report

We Need Information Before We Design

- What kind of a system
  - e.g. Website, App, ERP, stand alone client, embedded, ubiquitous (umliggjandi), wearble, etc... (This course is though mostly concerend with interactive systems meaning systems that interact with people)
- Requirements and Stakeholders
  - Covered that last week
- Users
  - Who will be using the system, what characterizes them, in what contexts will they be using the system and what are their goals (activities)

Know Thy User

- http://www.youtube.com/watch?v=nJVoYsBym88

This Information is Analysed

1. The Background
2. The Usage
3. The Context of Use
4. The User Goals
5. The Importance

- Each user groups gets a name
  - Something that describes this user group

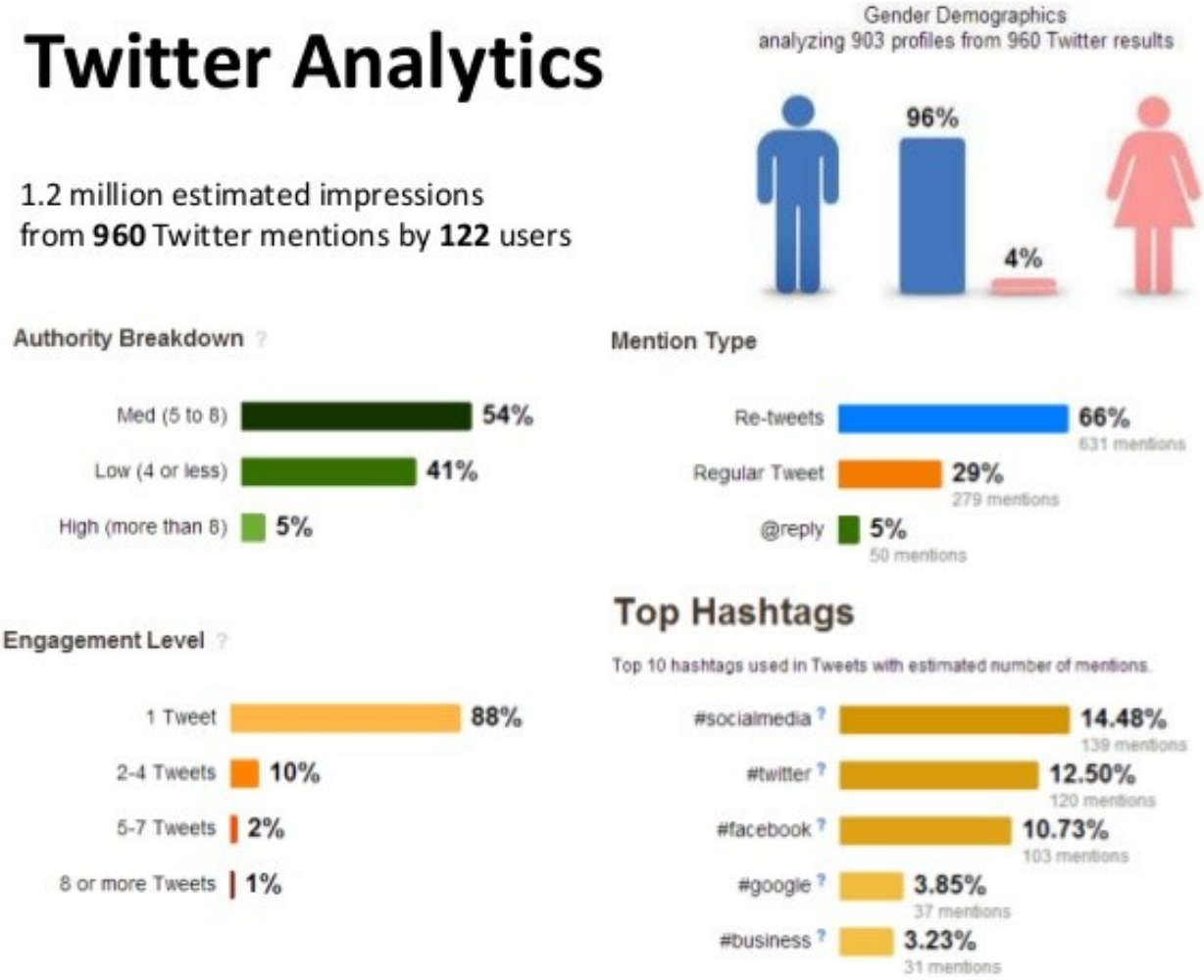
This Information is Analysed

1. Background

- **Age:** What is that Age range?
- **Gender:** Does the target group for this system have a particular gender or is it like the general public?
- **Education:** Does the user group have some education in common?
- **Abilities/disabilities:** Does this group have some abilities or disabilities that need to be considered when designing the system?
- **General computer knowlegde:** How is the computer knowledge of this user group in general?

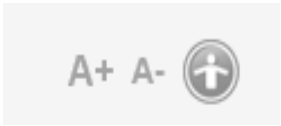
Fréttatíminn, January, 15, 2016

Can be Used to Analyse the Usage



Designing for disabilities

- This has had more focus in recent years
- We are asking:
  - Can people solve their daily tasks?
    - 15% - 35% of the general public answers that their disabilities affect their daily life
- User interface designers should pay attention to people that are visually impaired
  - Stillingar.is
  - 8% males are color blind
    - Good photos on pg. 43



This Information is Analysed

2. The usage of the system

- **how often:** will this user group use the system?
- **how much each time:** for how long does the user use the system in general?
- **the users skills:** How skilled will the users be? The skills users develop using THIS PARTICULAR system
- **the attitude:** How is the attitude of the user group towards the new system – positive, negative?
- **Estimated number of users:** How many do we think the users will be in this group?

Usage of the System Affects the Design

- How often?
  - Daily, weekly, monthly, yearly
- How long each time?
  - minutes, hours, days
- The users get skilled after repeated use
  - The tax report
  - Google, ja.is
  - Intranets
  - emails

User Skills Groups

- Novice users (Byrjendur)
  - Have never or only few times used the system
- Intermediate users (Meðalnotendur)
  - Have some skills, are not experts and not novice
- Expert users (Sérfræðingar)
  - Use the system a lot and know it very well

- This is just for skills using this particular system
  - Not general computer knowlegde

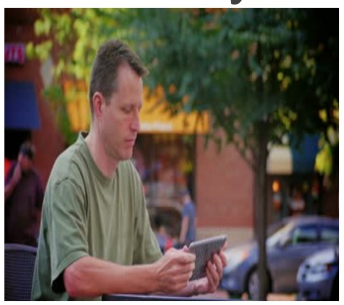
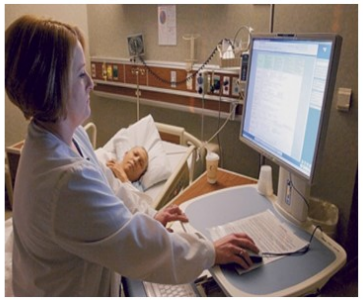
Designing according to the user skills

- Novice users have been emphasized a lot
  - We are only novice users once!
- Most of the users are intermediate
  - Often the design is taking care of novice or experts, not that much the intermediate
  - The users can have different skills for each task/goal
- Expert users
  - Use 10% - 20% as experts, the rest as intermediate

This Information is Analysed

3. The context of use

- **The real environment:** Where will the system be used, home, work, leasure, everywhere?
  - This can affect how easy the software is to use

- **The technical environment:** What is the equipment that the software will be running on?
  - GSM, Ipad, laptop, desktop, wearable gadget, etc.




Main tasks and importance

4. Main User Goals

- What are the main goals that this user group wants to accomplish?
- What is the most important goal for them?
- What is the goal that the will do very often?

5. Importance of the user group

- How important is the user group for making the system?
- What are the core users?

We Name the User Groups

- Something that characterises this user group

DESIGN IMPLICATIONS				
The Connected	The Mother	The Immigrant	The Young One	The Informed
Tele-commuting w/ office?	Healthcare Tamagachi? Stay connected to people who depend on her to tell them what to do.	Provide info in native tongue. Provide case studies from volunteer patients' diaries.	Case studies of patients who volunteer their personal diaries?	Have access to counseling resources. Independent recommendations available?
Expedite gaps in treatment(s) if possible	More entertainment Send e-mails when she has the energy	Provide shopping access for supplies / clothing.	Provide data and information in a way so that patient can access and become the masters of their situation.	Access to "How To" information dealing with treatments or device maintenance.

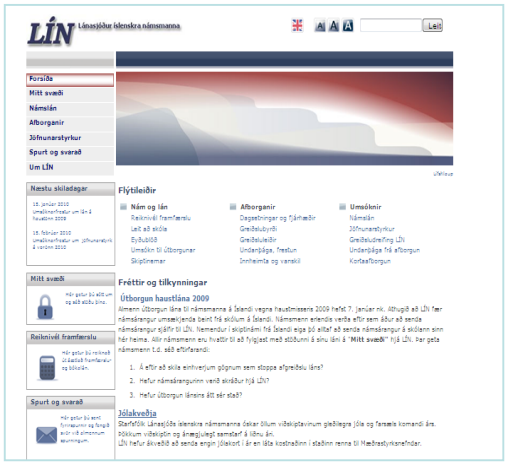
User Group Analysis Examples

User Group Analysis - Example

- Users of MySchool
- What user groups are there?
- What is their background?
  - Age, Gender, Education, Computer Knowledge
- What are their main goals?
- How is the usage?
- What is the context of use?
- How important is this user group?

Another example – LIN in 2009

- The Icelandic student fund had decided to redesign their website and look at the construction of the website from the users perspective
- The goal of the redesigning project was to give better service to their users; support that users can easily finish their tasks on the web and do not have to call the service personal at the student fund



The User Groups for LIN

- Students studying in Iceland
- Students studying abroad
- People that are paying their loans
- Supportive people for students
  - Agents (umboðsmenn), service representatives in banks, ...
- The staff at LIN

Documenting User Groups

User group	Background	Use of the system	Context	The main tasks
Notendahópur	**Bakgrunnur**	**Notkun kerfisins**	**Umhverfi**	**Helstu markmið**
Námsmenn hérlendis **Mikilvægi:** Mikilvægasti hópurinn ásamt námsmönnum erlendis	***Aldur:*** yfir tvítugt ***Kyn:*** bæði kynin ***Menntun:*** framhaldsskólapróf ***Hæfni/vanhæfni:*** ekkert sérstakt ***Tölvufærni:*** mjög góð yfirleitt	***Notkun:*** Kerfið mest notað á haustin. Lítið notað þess á milli nema út af sérstökum fyrirspurnum. ***Þjálfun:*** Engin þjálfun á kerfinu eða reynsla frá vinnu. ***Viðhorf:*** Notendur eru almennt jákvæðir fyrir kerfinu þar sem það veitir þeim þjónustu sem þeir þurfa á að halda. ***Fjöldi notenda:*** ca. 4.000	***Tæknilegt umhverfi:*** Mjög mismunandi hvernig umhverfið er þar sem notendur koma úr öllum áttum, nettenging og ytri aðstæður mismunandi. ***Raunverulegt umhverfi:*** Ættu að vera oftast í skólaumhverfi eða heima, en gætu verið hvar sem er. ***Annað umhverfi:*** ekkert sérstakt	-Sækja um lán eða styrki og nálgast upplýsingar
Námsmenn erlendis **Mikilvægi:** Mikilvægasti hópurinn ásamt námsmönnum hérlendis	***Aldur:*** yfir tvítugt ***Kyn:*** bæði kynin ***Menntun:*** framhaldsskólapróf ***Hæfni/vanhæfni:*** ekkert sérstakt ***Tölvufærni:*** mjög góð yfirleitt	***Notkun:*** Kerfið mest notað á haustin. Lítið notað þess á milli nema út af sérstökum fyrirspurnum. ***Þjálfun:*** Engin þjálfun á kerfinu eða reynsla frá vinnu. ***Viðhorf:*** Notendur eru almennt jákvæðir fyrir kerfinu þar sem það veitir þeim þjónustu sem þeir þurfa á að halda. ***Fjöldi notenda:*** ca. 2.000	***Tæknilegt umhverfi:*** Mjög mismunandi hvernig umhverfið er þar sem notendur koma úr öllum áttum, nettenging og ytri gæti verið mjög erfiðar aðstæður sums staðar. Gætu verið með umboðsmann. ***Raunverulegt umhverfi:*** Ættu að vera oftast í skólaumhverfi eða heima, en gætu verið hvar sem er. ***Annað umhverfi:*** ekkert sérstakt	-Sækja um lán eða styrki og nálgast upplýsingar
Námsmenn, sem lokið hafa námi **Mikilvægi:** Næst mikilvægastur á eftir námsmönnum hérlendis og erlendis	***Aldur:*** 20 - 99 ***Kyn:*** bæði kynin ***Menntun:*** háskólapróf ***Hæfni/vanhæfni:*** ekkert sérstakt ***Tölvufærni:*** misjöfn, fer töluvert eftir aldri	***Notkun:*** Kerfið notað tvisvar á ári til að greiða afborganir. ***Þjálfun:*** Engin þjálfun á kerfinu eða reynsla frá vinnu. ***Viðhorf:*** Notendur eru almennt jákvæðir fyrir kerfinu þar sem það veitir þeim þjónustu sem þeir þurfa á að halda. ***Fjöldi notenda:*** ca. 30.000	***Tæknilegt umhverfi:*** Mjög mismunandi hvernig umhverfið er þar sem notendur koma úr öllum áttum, nettenging og ytri aðstæður mismunandi. ***Raunverulegt umhverfi:*** Ættu að vera oftast heima eða í vinnu. ***Annað umhverfi:*** ekkert sérstakt	-Skoða upplýsingar um lán - Greiða afborganir

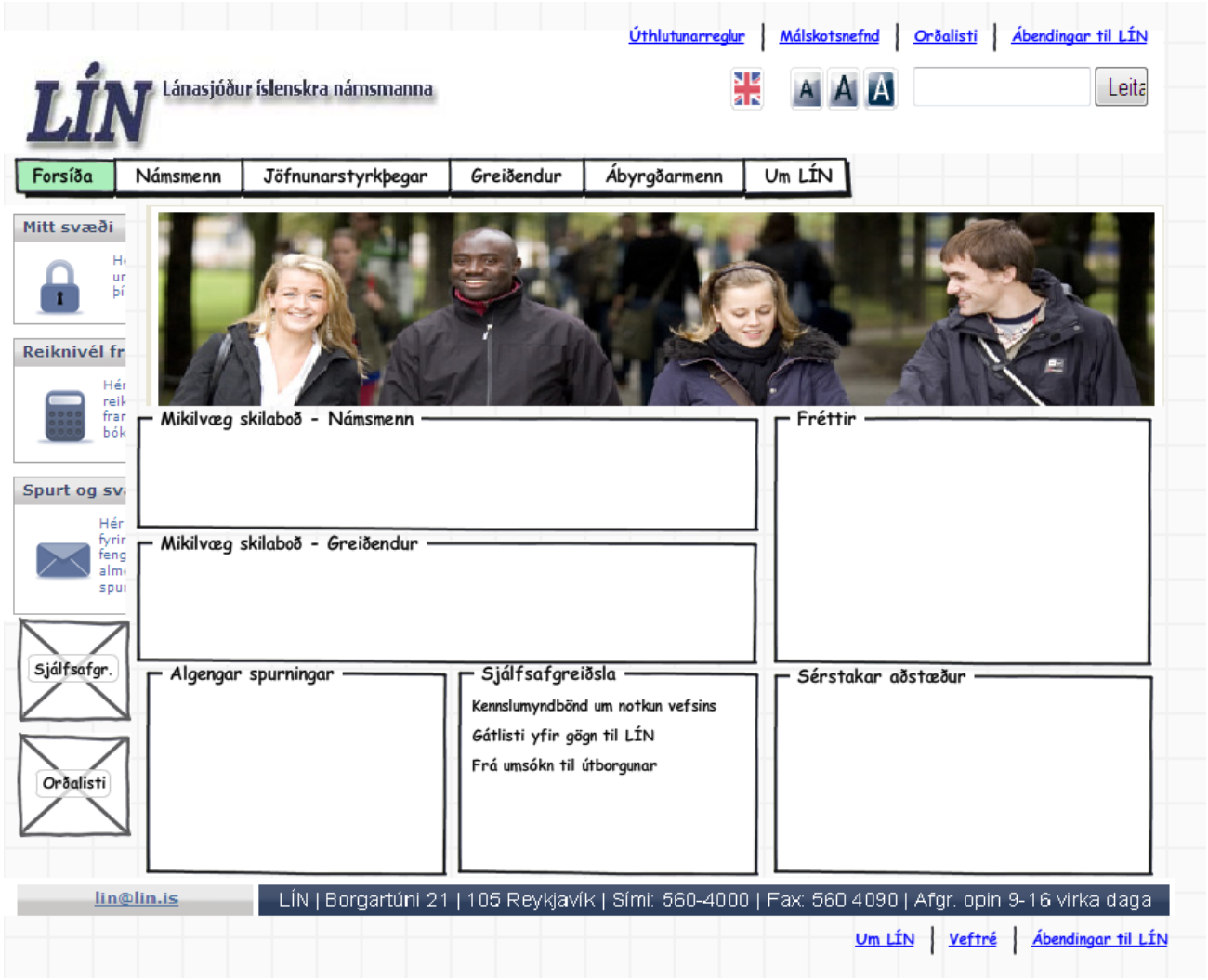
Further Analysis Using User Groups

Greining á nytsemi fyrir öll verkefnin

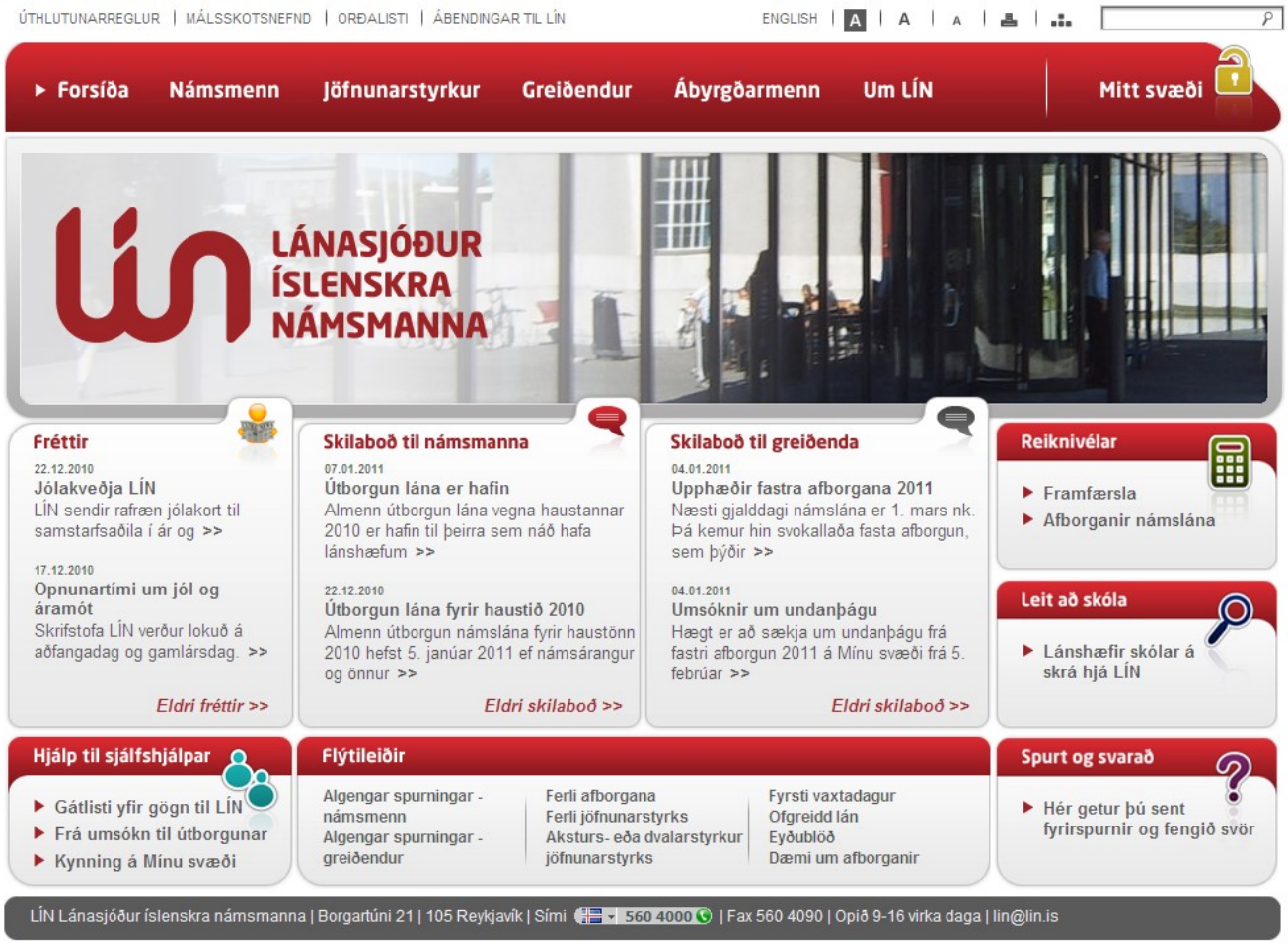
Í töflunni er greint hversu auðvelt er að leysa eftirfarandi verkefni. Einnig kemur fram í töflunni, hvaða notendahópar munu vilja leysa verkefnin á vefnum.

	Námsmenn vegna lána	Greiðendur námslána	Jöfnunarstyrkþegar	Umboðsmenn	Ábyrgðarmenn	Aðrir notendur	Mjög auðvelt	Auðvelt	Miðlungs	Frekar flókið	Mjög flókið
1. Fá svör við: hvernig á að sækja um lán	X			X						X	
2. Fá svör við: hvernig kjörin eru	X			X				X			
3. Fá svör við: hvenær kemur lán til útborgunar	X			X				X			
4. Fá svör við: hvaða nám er lánshæft	X			X						X	
5. Fá svör við: ábyrgðir á lánum	X	X		X	X				X		
6. Ferlið frá a - ö (umsókn, útborgun, afborganir..)	X			X				X			
7. Upphæðir og gjalddagar afborgana		X			X				X		
8. Hve lengi standa endurgreiðslur yfir	X	X		X	X						X
9. Möguleikar að borga upp lán	X	X		X	X						X
10. Úrræði vegna greiðsluerfiðleika		X			X		X				
11. Hvað gerist ef afborgun er ekki greidd		X			X		X				
12. Hvernig á að sækja um styrk			X				X				
13. Hvenær kemur styrkur til útborgunar			X								X
14. Hvaða nám er styrkhæft			X					X			
15. Hvaða skilyrði eru fyrir styrk			X					X			
16. Upplýsingar um hlutverk umboðsmanna				X						X	

User Groups Reflected in the New Design

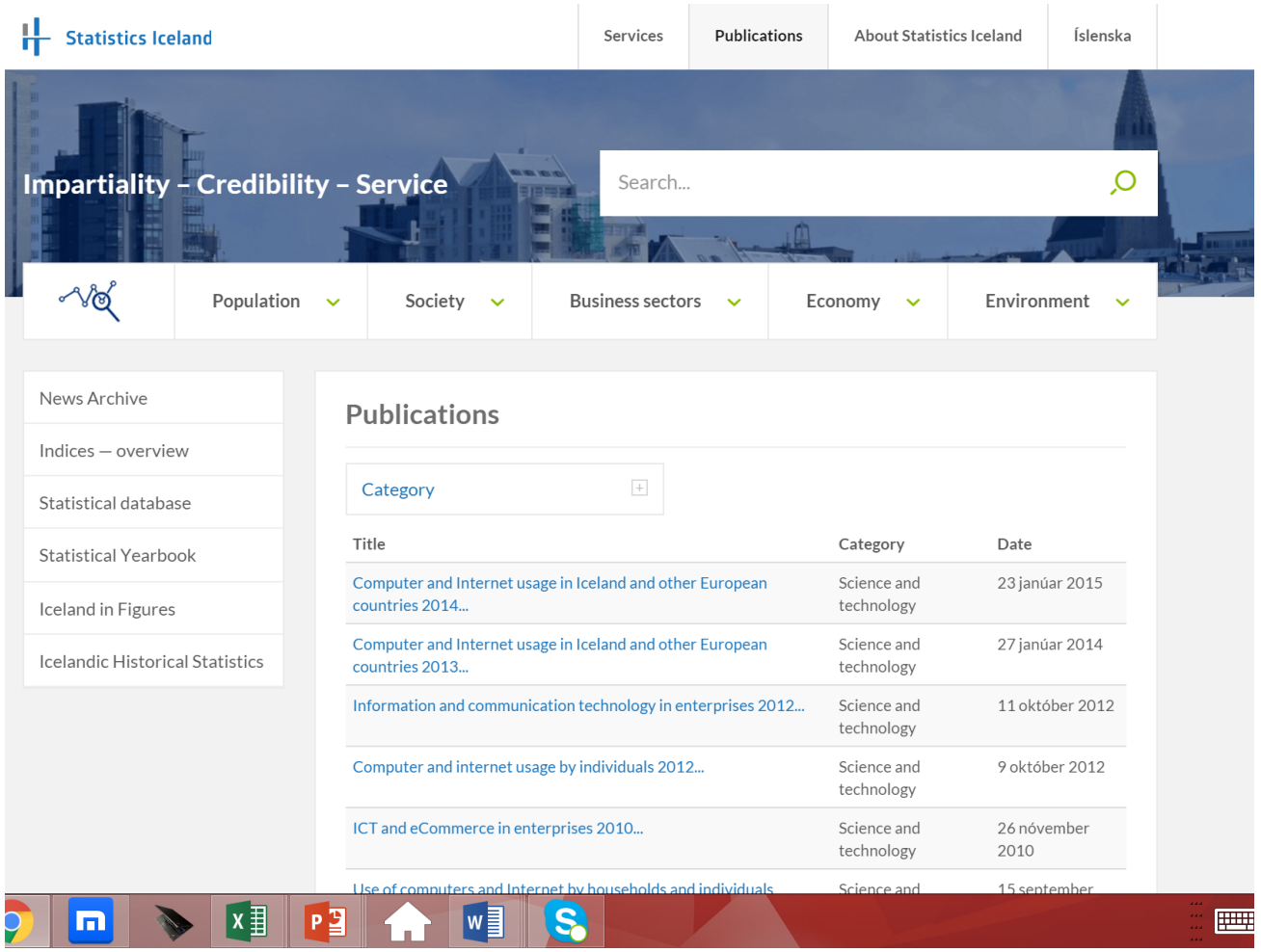


Final design

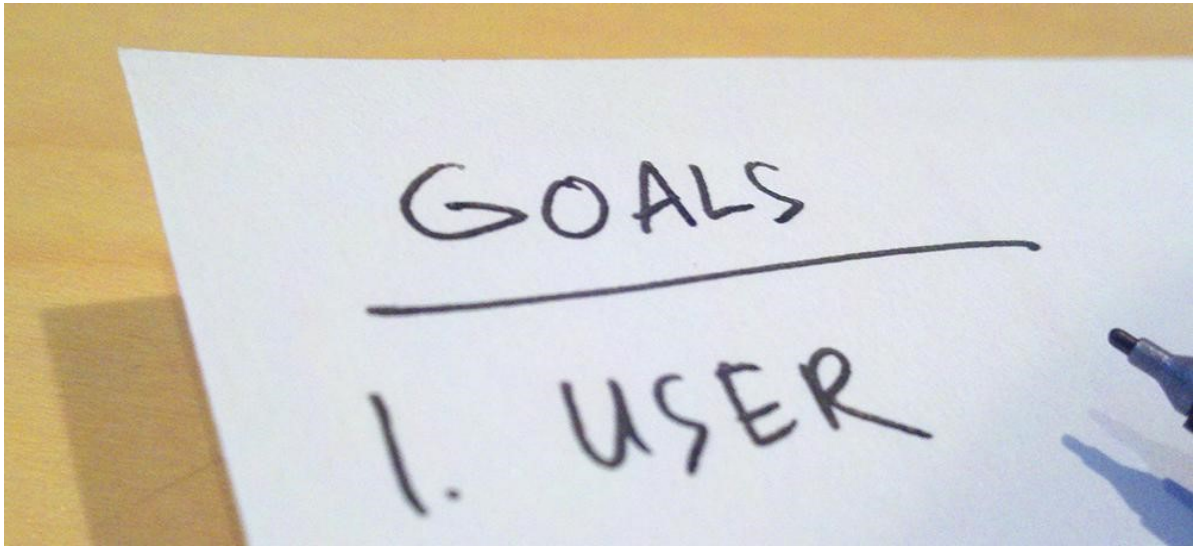


Sometimes We Need Statistical Information

- We can get statistics at the web from Statistics Iceland



Describing the User Goals



Describing the user goals

- A few user centered design methods that can be used to do this. We will look at three:
  - User stories - part of e.g. Scrum
  - Scenarios
  - Use cases - part of UML
- Use cases is most formal, the two latter ones are less formal

User stories

- Used in Agile methods, e.g. Scrum (popular today)
- A quick and informal way to express what a system must do (requirements according to users)
- Uses everyday language and not very detailed - > conversation starter
- Are prioritized and later may be broken down into tasks and time estimated by programmers
- Who, what and why
- In Scrum, user stories go into the backlog and are INVEST = (*independent, negotiable, valuable, estimatable, small, testable requirement*)

Examples of user stories

- [Format: "**As a <user type> I want to <do some action> so that <desired result>"**]
- As an office user closing the application, I want to be prompted to save if I have made any change in my data since the last save so that I will not lose my data.
- As a non-administrative user, I want to modify my own schedules but not the schedules of other users so that only mine has changed.

More on user stories:

- http://en.wikipedia.org/wiki/User_story

Scenarios

- A fictional story about a person (representing a stakeholder group), using the system to achieve a goal (and the interruptions he/she might encounter)
- Scenarios create a context and “actual” physical world
- Can set the scene of requirements and help in getting the right requirements (real needs)
- Focuses on interaction between user and system
- Can be high-level or detailed
- Often used in usability testing

Example of a scenario

- Mary wants to fly to Iceland next Friday, returning late on Sunday. She wants to know how much this would cost, and also whether it would be cheaper to fly a different day back. She is not quite sure of the airport name in Iceland. When she has found the right flight, she wants to confirm the purchase with a credit card and get a receipt.

- More on scenarios:
  - http://en.wikipedia.org/wiki/User-centered_design#Scenario
  - http://www.usability.gov/methods/analyze_current/scenarios.html

Use cases

- A more detailed description of a single activity or operation within a system
- A use case is not "drawn" like many UML diagrams, but written
- The format of a use case has not been standardized
  - you will see different forms in different books
- Should be understandable for people with little or no technical background
- Should describe in detail what happens
  - and what should not happen
- Is often used as a foundation for test descriptions

Name:	User borrows a book
Number:	21
Priority:	High
Precondition:	None
Description (base flow):	A user gives the clerk the book he wants to borrow, the clerk scans in the book barcode, or types in the ISBN of the book. The user then shows his library card, the clerk scans that in as well, and the user can then take the book to his home.
Alternative flow:	• This is a new user, and he doesn't have a library card. The clerk will have to register the user (see use case 22: Register new user). • The users library card has expired. Clerk offers user to renew his subscription (see use case 23: Renew user subscription). • The user forgot his library card. The clerk types in his SSN instead of scanning his card (see use case 28: Clerk looks up a user) • The user has borrowed a maximum amount of books, and must return some of them before he can borrow other books.
Postcondition:	This particular book is now in "borrowed" state, and cannot be borrowed by another user until it has been returned.
Source (requirements):	3, 11, 17
Actors	User, Clerk
Author	Jón Jónsson

Next lecture

- After the brake
  - UML diagrams
  - More about Use Cases
  - Interviews