Improving the intranet

ILKKA MIKKONEN, REIJO KARI
Information Technology, Oulu University of Applied Sciences, Oulu, Finland

Abstract: Typical problem with intranet applications is the vast amount of knowledge included in the system. This example discusses the development of a possible new student intranet but the principles can be generalized also to other kind of organizations, e.g. to SME companies.

The users of the student intranet represent different fields of studies and students from different backgrounds related to their age and study situation. Some are normal young full time students, the others adult students making online studies while working.

Now and in the future, the real-time requirements are more and more important. The schedules of the online studies are hectic and all information needs to be up to date and easily available. The intranet must serve all the users as well as possible regardless of the time and their whereabouts, thus the mobile versions of the system are vital. In order to meet these needs, a plan for the new mobile and workstation versions of the intranet is done.

User-oriented design method serves as the framework for the intranet design. It has different phases including user interviews, observations and analyses. Brainstorming session helps to create new ideas, and after it an affinity diagram is drawn to present the brainstorming results. Based on these visioning phases and a storyboard, a paper-model for the new intranet user interface is then created. The focus is on the system's ability to fulfil the needs of the user of the new intranet.

Keywords: intranet, user-oriented design, contextual design, knowledge management.

1 Introduction

The authors of this paper are the teacher and a student in the course "User-oriented Design" at Oulu University of Applied Sciences (Oamk). In this paper we are going to deepen our knowledge on some issues related to the usability of intranet applications and consider the possibilities for improving the user experience (UX) when using the intranet. As an example case we are using the student intranet at Oulu University of Applied Sciences but the principles can be generalized also to other kind of organizations, e.g. to SME companies.

Typical feature for intranet applications is the vast amount of information stored in it. Student intranet has a lot of different kind of users. Students from various disciplines have different needs and there are nowadays many more study forms besides regular daytime studies, such as online studies and different self-study forms are also common. Online studies are very tightly scheduled and require correct real-time information to be easily found from the intranet. Intranet must serve all students well regardless of the study form, place or time. This paper considers a mobile version and a new desktop version of the student intranet.

Framework for the paper is user-oriented design process called contextual design [1]. The process includes various phases starting from user interviews, making observations and interpretation. Brainstorming kind of working methods are used to generate features of the new intranet which is then documented on an affinity diagram. Based on these visioning phases and a storyboard a paper prototype for the new user interface is created. Focus on the development is to fulfil the needs of the intranet users by introducing user-centric design methods.

2 Interviews and interpretation

The design of a new user interface for the intranet is started by an analysis of the user-experience (UX). The application is given to a user (users) for evaluation. The responses of the user are monitored and the feedback is recorded. User opinions on the functions and details are asked for and recorded. The goal is to see and understand the functionality of the intranet and especially the possible problems and failures to operate it. These contextual interviews should be done with several users from various user categories.

2.1 Contextual interviews

First one person who has experience in intranets was asked to test the existing student intranet. He gave some spontaneous opinions in an interview that lasted abt. 15 minutes. Some predefined questions were used to stimulate the discussion.

General view on the intranet

"The first impression is that the user interface looks clear to use. The issues are well grouped and the necessary links are well presented. The action bar at the top of the page fits for the purpose. The profile of the user is well shown. The entity gives rather positive impression."

The structure and visual-aesthetic appearance

"The layout of the front page looks good. The block distribution could perhaps be divided into two columns. It might make it easier for the user to find what he needs. The structure

looks anyhow quite well functional and there is no need to start digging out for the information. The color appearance looks discreet. The colors are coming nicely "out", they are not too strong and they support the readability and making observations. The green color is relaxing and the orange is a good contrast. The user interface is at the same time relaxing and attracts attention."

Needs for development

"Even though the page gives more positive feeling than negative, there are still things to be improved. The most important thing is the big amount of information. From a big amount of information it is hard to find what you are looking for. I think that at the right hand side column the items could be categorized and presented for example by visual buttons. Generally there could be more pictures on the page through which the user could find instructions of use given by short videos. For the learning delta a visual window structure would be good."

2.2 Interpretation

Based on the observations and notes from the interviews a summary for the development of the new user interface is drawn. The interviews reveals the key issues and insights of the present application. On top of these the interpretation of the user experience leads to the goals for the development of the new user interface. By focusing on the solving of the problems of the present application a new and user-friendly intranet can be created.

2.2.1 Why user interface needs to be improved?

Besides of the many good features of the present intranet the vast amount of information on the front page was revealed in the interviews. The big amount of material on the front page makes somewhat disorganized feeling even though the information is rather well categorized. On top of this there are plenty of functions which are not needed by some users. This could be made better by allowing the users to assimilate the page contents according their needs.

According to the "Mobile first" principle [2], the application is designed for the small mobile screen and adapts from that onto larger screens when they are used. The present intranet is not yet "Mobile first". The major cause for the development need is the big amount of information. By reducing it and allowing the user to make personal assimilations, this flaw can be corrected. At the same time the user-oriented design is better achieved. Also the human-computer interaction (HCI) could be improved by implementing "mobile" features like text messages or sound "beeps" when important information is published on intranet. Similarly the teacher's messages for the online students could be given as text messages and sound alarms. Generally the real time requirements and the online interaction have become more important and should be strongly emphasized on the new system.

2.2.2 The development goals

The goals for the new development process must be set. For the new student intranet those are to set the amount of contents on a page to a right level, improving the possibility for personal assimilation, improving the use by mobile devices, improving the real time interaction, and as a whole making the system more user friendly. The user interface should give an overall positive impression. The items should be grouped logically, so that it will be

easy for the user to find what he needs by utilizing correct categories. The layout should be clear both with the smallest mobiles and the largest desk top screens.

The personal adaptation enables individual way of use. The user may select the most suitable functions based on his study profile (day- online- or open university student, and the field of study). Also services like lunch menus and sales announcements can be switched on or off. The goal here is to please the user by showing that the intranet wants to serve the user individually.

According to the "Mobile first" principle the new interface will be simple and easy to use. On the smallest mobile (phone) devices only the most important items (selectable) are shown. On a middle size screen (laptop) it will be possible to include more options, however maintaining the information clarity.

Improving the interaction is aimed at turning the intranet into a system which serves better the various study needs. Real time interaction between user groups (students, teachers, student services and other staff) is supported. Old information should be deleted and real time information on all changes, such as cancellations, time and location changes etc. is supported.

3 Affinity diagram

Affinity diagram is a tool to organize all ideas gained through user interviews and brainstorming sessions. Ideas, problems and possible solutions can be collected into a visual form within logical homogeneous groups. The goal of the affinity diagram is to create a limited number of consolidated groups of items and their relations with each other which will be helpful in understanding the problems and selecting the solutions. The method can be used together with brainstorming kind of processes when developing user interfaces and whole applications. [1], [3]

The affinity diagram created for the new student intranet is shown on Figure 1. It shows widely different kind of matters related to the new intranet. This intranet is strongly aimed at the service of the students because the staff has its own intranet user interface. For the students the most important matters are the course related items and the real time messages like cancellations and announcements. For the students the new intranet will be an information platform which delivers correct and real time information. Interaction services must be improved because the education is changing more and more out of the traditional lecture rooms. Instead there will be more online studies and studies based on connective learning. In connectionism [4] the studying is possible at the working places and real time communication is necessary.

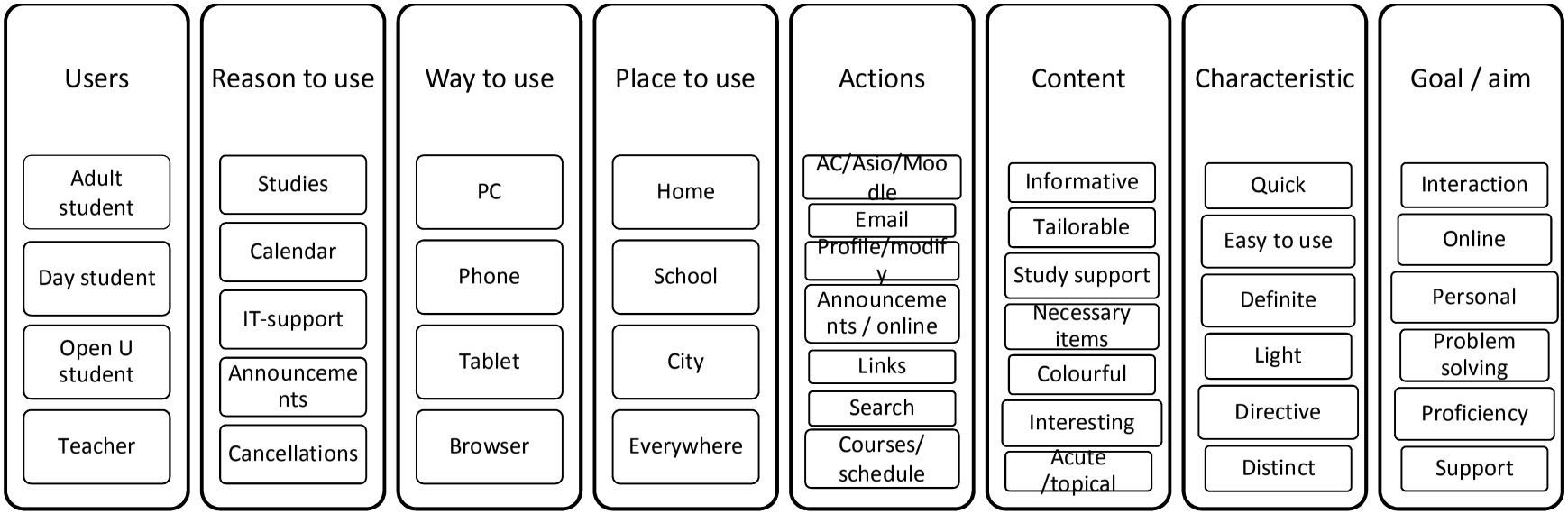

Fig. 1 *Affinity diagram for the mobile student intranet*

4 Story board

A story board is a cartoon type of presentation about how new product can be used. Story board is created on and follows the findings done on user interviews and interpretation. It shows the user in different phases of using the new product. Different viewpoints of the use can also be presented. [5]. Story board on figure 2 shows one example of the use of the new intranet.

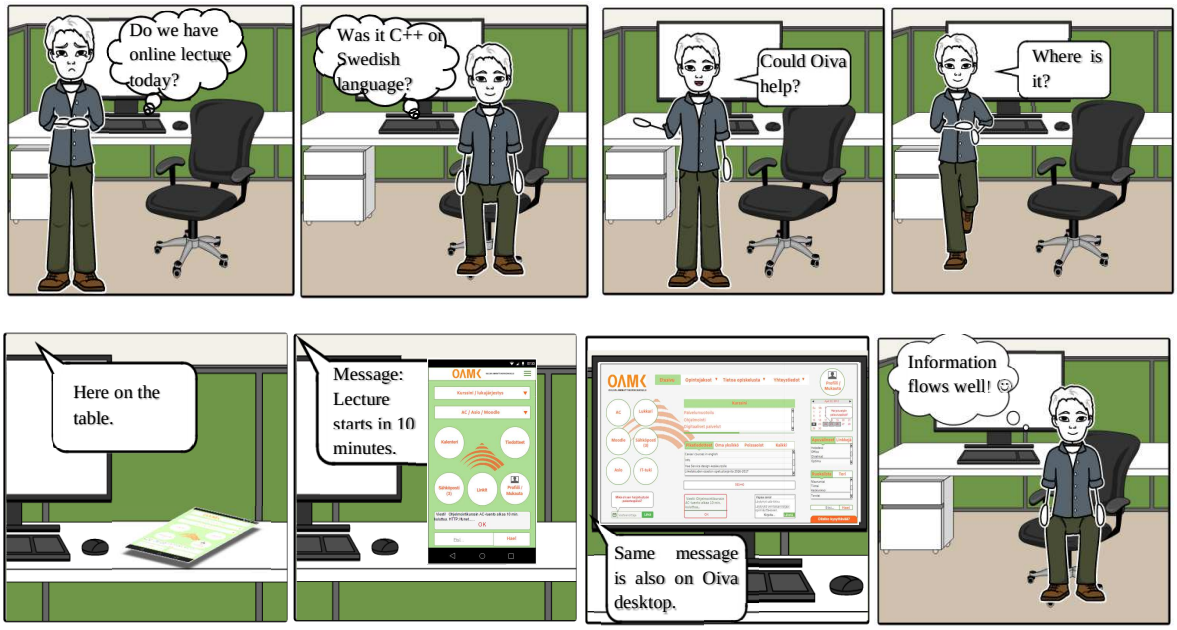

Fig. 2 *Story board example for new student intranet*

5 Paper mock-up

Three paper mock-ups were done and tested, and faults found were corrected. In the first version (fig. 3) there was no online messages and the layout was still not good.

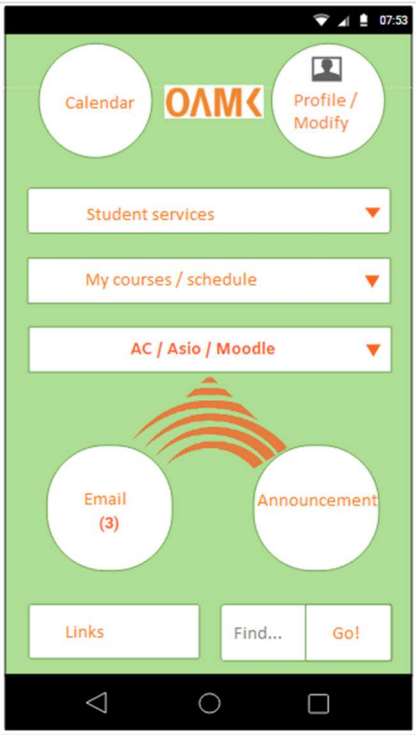

Fig. 3 *Mobile intranet ver. 1.0*

In the second version few elements were relocated and the Oamk top menu and message window were added.

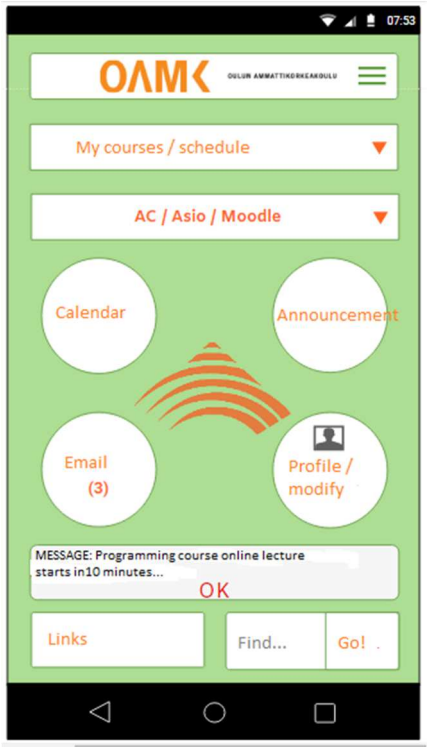

Fig. 4 *Mobile intranet ver. 1.1*

In the last version some more space was made free for other functions by relocating the Oamk menu. There are two drop-down menus on the front page.

Fig. 5 *Mobile intranet ver. 1.2*

In the desktop version of the intranet the most important aspects have been communication services and selecting/limiting functions on the front page. The communication must be real time and two-way. The restriction of the function visibility needs to be personal based on the students study field and own wishes. The whole front page must be visible without scrolling. Only one paper mock-up version is provided for the desktop user interface in figure 6.

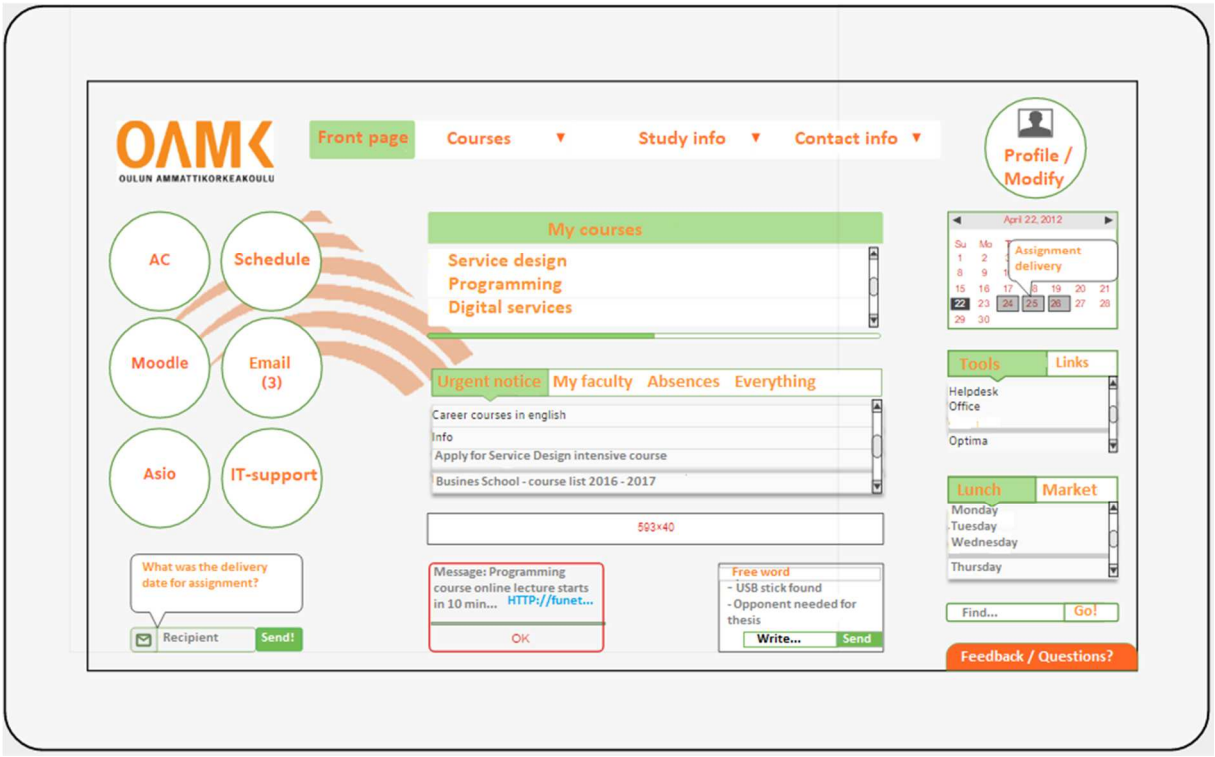

Fig. 6 *Desktop intranet ver. 1.0*

5.1 Flow chart model

The front page of the user interface has only the most important services for the student. The student intranet must however contain also other study related information and therefore a lot of information is provided on lower level pages. Figure 7 shows a flow chart of the actions on front page menu. Mobile user interfaces contain only the necessary information. Copious text elements have been avoided.

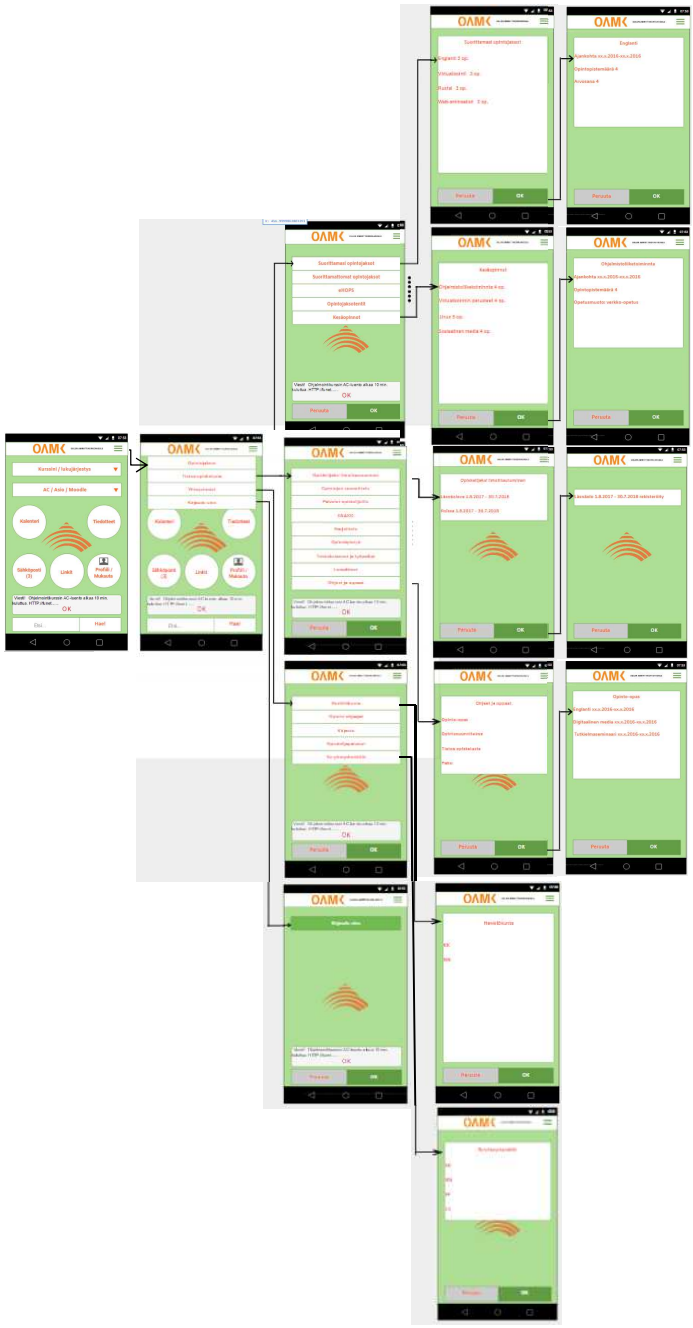

Fig. 7 *Flow chart of the menu actions*

6 Site map for the entire intranet

As the final step the site map for the entire new intranet application is created. It shows the structure of the new intranet through service categories shown as square boxes and their services shown as ovals.

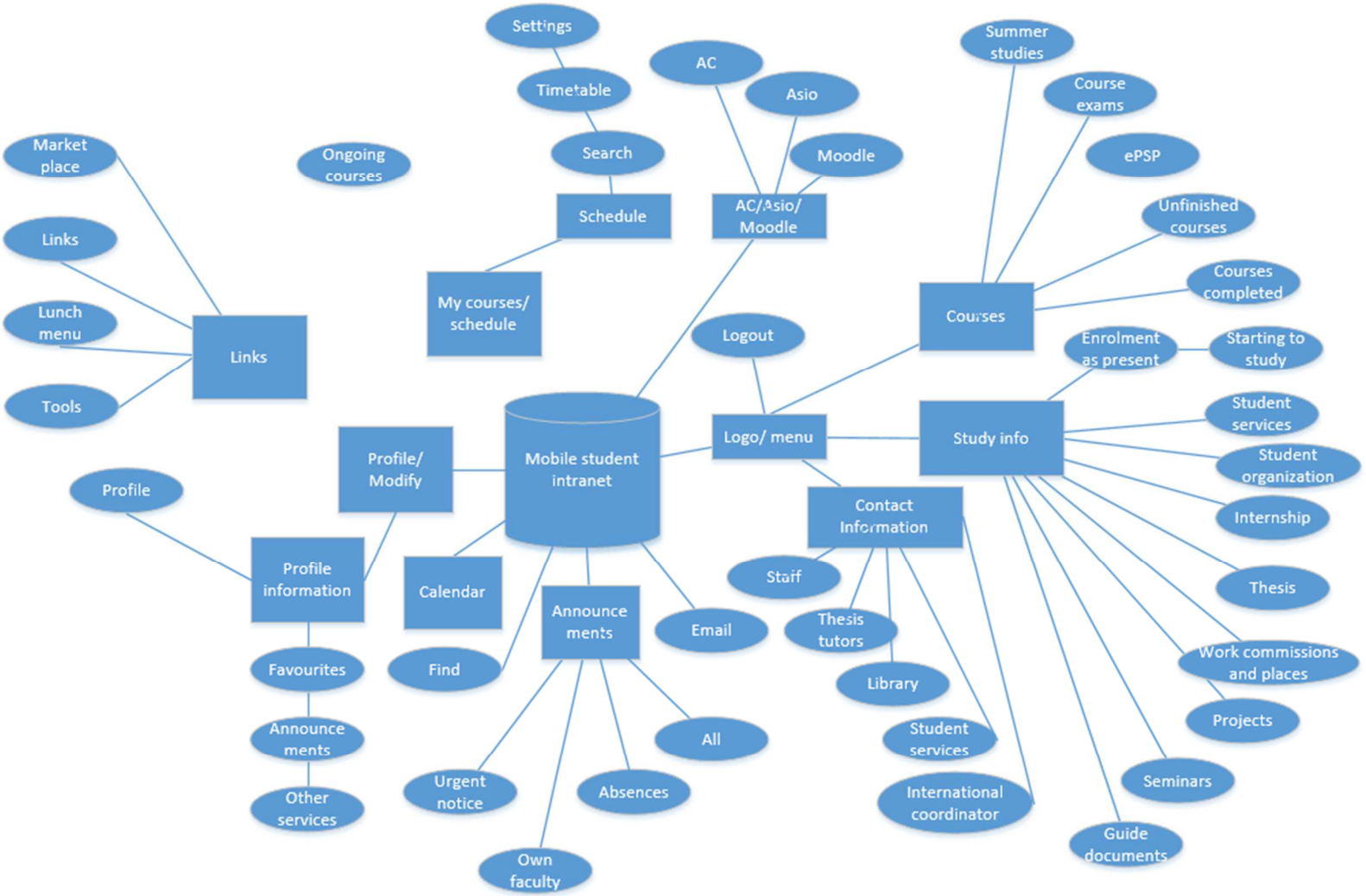

Fig. 8 *Site map for the new intranet*

7 Summary and conclusions

The paper gave a summation about the design process for improving an existing intranet application for university students as users. The method for the design work was user-oriented design method called contextual design. The aim was to present a better alternative for the existing intranet. Contextual interviews and interpretation gave new insight for the design. Based on the information gained through these an affinity diagram was created. The affinity diagram presented the features of the new intranet. Storyboard was used as an experimental method to demonstrate new features of the intranet. The development versions of the new mobile user interface were given as paper mock-ups. An example flow chart for one menu action was also shown. Finally, an example flow chart for one menu action and site map for the new mobile intranet is given.

When designing something new, it is important to see the present user needs and also the potential user needs in the future. In the future the students own responsibility on his study attainments will be increased, i.e. so-called self-study will be increasing. The studying will move more and more online and out from the lecture rooms. Therefore the materials and applications used for studying must be easily accessible and supporting real time service. Announcements and interaction must happen here and now. These are especially important for the mobile versions of the intranet. User-friendliness incudes that the user can tailor the interface according his needs and wishes. Personalizing can improve the usability and have a positive effect to the study results.

For the mobile phones a challenge is created by the small size of the screen. Many functions from the desktop version has to be left out and only the most important things can find a place on the front page. This is difficult because it is very typical for the intranet applications to have a vast amount of information and functions. For the mobile user interface the functions were restricted to the minimum.

Literature

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Contact data:

Ilkka Mikkonen
Head of Degree Programme in Business Information Technology
Oulu University of Applied Sciences
Teuvo Pakkalan katu 19
FI-90130 Oulu, Finland
ilkka.mikkonen@oamk.fi

Reijo Kari
Degree student
Oulu University of Applied Sciences
n6kare00@students.oamk.fi