

# Turning the internet around – e-Me: The Students ideal e-Service

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**Abstract:** Today students, as many other groups of citizens, are offered, indeed required to use, a rapidly increasing number of e-Services. They range from school and course sites to interactions with authorities as well as companies offering student discounts. This paper reports on a pioneering project in Sweden with a radical approach to this, namely to issue the student with a electronic assistant, an e-Me, that schools, authorities and companies are required to address with interacting with the student. A larger number of students and partners, universities, companies and authorities, have been engaged in the design of such an e-Me. It might be thought of as turning the internet around – rather than having students keep track of sites, they will have to come to the students and interact with them in the way specified by them.

## 1. Introduction

### 1.1. The Problem

Today students as many other groups of citizens are offered, indeed required to use, a rapidly increasing number of e-Services. They range from school and course sites to interactions with authorities as well as companies offering student discounts. This forces students to remember a multitude of user IDs, passwords and login procedures. On top of this students are often provided with special email accounts for courses and educations. Many students have four or more different email addresses.

Consequently a lot of time is spent on logging on to different mail systems, trying to find passwords and links to various sites. Sometimes e-services are not used, because it's easier to do it the "traditional" way than to figure out the electronic. One example is the Swedish National Board of Student Aid, who provides grants and loan to most Swedish students. They issue a password at the beginning of the semester, but the students will normally not interact with them until months later, when they have to make an assurance that they are studying. Many students who can't find the passwords then discover it's easier to fill a paper form than to request a new password, leading to a large number of manual assurances at the latest possible time.

While these types of problems are not only restricted to students but are rather experienced by larger groups of citizens, the project have focused students because they are in the process of developing skills to deal with communications and schedules in process of becoming adults, and are therefore both reflective and open to change.

In many countries there is also a focus on both increasing the number of students and making it easier for disadvantage groups to enter higher education, and solving or dealing with these problems can be part of that agenda.

### 1.2. The e-Me Concept

In a pioneering project in Sweden, the e-Me Project we are working with a radical approach to this, namely to issue the student with a electronic assistant, an e-Me, that schools, authorities and companies are required to address with interacting with the student. It might be thought of as turning the internet around – rather than having students find and keep track of sites, the sites will have to come to the students and interact with them in the way specified by them.

The concept is developing as a counter reaction to the massive onslaught of sites, home pages and email spam. There is nothing inherent in the internet technologies that makes the internet necessarily organization centric. The e-Me concept clearly illustrates how the same technologies can be used to increase the initiative of the students, citizens or other users.

Amongst the project's partners are several universities, government authorities and companies like Intel, Microsoft, VISA, Telia, as well as smaller student oriented companies.

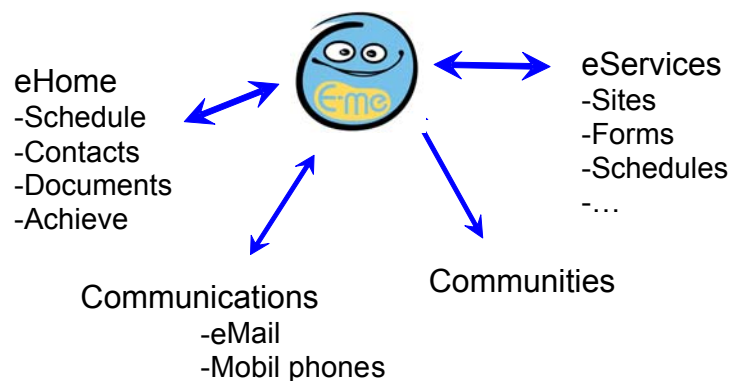


Figure 1. The e-Me interacts with various systems on behalf of the student.

## 2. Objectives of paper

The objective of the paper is to:

- Share the insights in contemporary students' wants, needs and behaviors regarding e-Services
- Promoting the idea and stimulate discussion about the e-Me concept
- Raise the question of problems owing to diverse, incompatible, non-client centric e-Services
- Invite new partners into the development of the e-Me service.
- Invite to a dialogue about co-design methods of knowledge creation

## 3. Method of Paper

The project is driven by a Co-Design process [1,2] and this paper reports upon important outcomes of this process. In this project, we are using a Co-Design approach in which important stakeholders are involved in an evolutionary process where an initial idea is redesigned into solutions for implementation in different stages. Next part of the paper presents how the Co-Design process has been performed, involving students, universities, government authorities and companies.

## 4. Developments

The e-Me Project have during the autumn run a number of workshops with students to design an “e-Me” according to their ideals. Separate workshops have been run with the projects partners to develop business models for making the e-Me a real service. As a third source of inspiration some designers, artists and design oriented researchers has been involved giving their ideas about different possible futures with an e-Me service.

### 4.1. Stakeholders

Four groups of stakeholders have been identified, which the project has engaged:

- **Students:** The most important stakeholders are of course the students; if they choose not to use the service is has utterly failed. The students are not a homogenous group however and there is a great variance in the uptake of new technologies and services, as well as big differences in attitudes towards issues of integrity and security.
- **Universities:** The universities on one hand would like to improve the quality of student services, but on the other hand they are aware of increasing “branding” issues. They would like to be viewed as unique and that includes student service concepts and may be reluctant to collaborate on these. They are also disperse as a group, smaller universities may have simple and elegant services while the larger of have many departments needs to consider.
- **Companies:** Some of the companies have students as their primary customers, other want to build their brands for future business, other again would like to sell technology and services to the e-Me itself. They range in size from local student companies to the global corporations. Taken together all this makes them a very heterogeneous group.
- **Government Authorities:** Last but not least there are a number of government authorities that we need to involve. They also have their own agenda, where on the one hand they would like to improve their services offerings, but on the other hand may compete with each other for funds.

### 4.2. Student Workshops

The project has run 9 student workshops (one as part of the pre study) and performed interviews with both students and high school pupils planning to go university. We have also participated in works shops with alumni’s on the issue of “life after school”. First we ran 2 sets of 3 workshops in Sweden, in Stockholm and Borås to develop the e-Me scenarios. We choose to do parallel sets in Stockholm and Borås to gain insight from students studying in a large city as well in a small city. We then ran 2 workshops in Barcelona to verify the concept at get an international perspective. We have used the results of other studies as well, both European and US. [3]

The first workshop the students discussed their own situation in respect to their school, authorities, companies, shopping, living, friends, private life, email, mobile phones etc, in groups. The groups presented to each other their findings and conclusions were drawn, identifying the problematic issues. The purpose of the first works shop was to ensure that the project is “barking up the right tree”, that the e-Me will address important issues. We didn’t introduce the idea of electronic assistants while we didn’t want to bias the students in coming up with cool ideas for unimportant services. By letting them discuss issue of student life in

general, we were able to get a view over how many of these could be improved by new services. An example of this is that in major cities like Stockholm one of the biggest problems is getting an apartment. Since this stems from shortage of housing and low student incomes, it's not easily solvable with IT-artefacts. But a majority of the problems discussed were information related and therefore we knew the project could produce new services that would be meaningful to the students.

The second workshop focused on improving "last week". The basic idea of the e-Me was introduced at the beginning of this workshop, using a series of cartoons. The students were asked to discuss in groups how their last week should have been ideally, given the experience of the first workshop and the concept of a versatile, omnipresent electronic assistant acting on their behalf. They were asked to present their conclusions as Co-Design Scenarios preferably as cartoons, using flip charts. At the end of the WS all students participated in a discussion on the usefulness of the scenarios.

Based on the work and discussions of the students the project team wrote eight complete scenarios, addressing the situations in greatest need of improvement according to the students and describing the ideal way the students wanted to experience these situations.

In the third WS the students were given the written scenarios based on the previous WS and asked to review and further develop these scenarios. Some scenarios was also made into cartoons and presented.

## **5. Results**

The most important result of the project is the scenarios presenting the ideal e-Me according to the students. The scenarios have been made out as cartoons to enable as many people as possible to explore, review and improve them. These cartoons are 12 pages, why we just include a summery of them and some of the most important concepts in this paper. We also present two important qualities of the "modern student" that have been very influential on the e-Me design, as well as other findings which are both noteworthy and important in the design.

### *5.1. General impression of the students situation*

There are two qualities to the students as the present themselves that have become driving for the design of the e-Me and that the partners, including partnering universities, have considered new insights: The "professional student" and the "collaborative student". (These may, of course, not be new to others.)

#### **5.1.1. The "professional student"**

We find that students today are very goal oriented, compared to just 10-15 years ago. They see a strong connection between their education and there future life. Therefore their choice of education is not just the matter of their interest or talent, but also a question of income, life style and career. This is also reflected in their view of work during studies. In Sweden more than half of the students work in parallel [4], even though most students get grants and favorable loans from the government. In for instance Spain the percentage is higher, since there are few grants and no loans. (All students we interacted with in Barcelona did work.)

This is also reflected in their choice of parallel work, they will weight the merit of the job with the pay and the work hours. Sometimes they choose as less well paid work because they believe it will help them make important contacts and/or look good on their CV.

Having one or more jobs on the side makes planning and schedules important. Today many schools still announce cancelled classes only by posting a note on the class room before the lecture, which is annoying for students who have sometimes traveled far just to attend that

lecture. The idea of getting for instance a text message as soon as any change occur is highly praised, in fact in Stockholm students said they are even willing to pay for such service.

At Mataró, Barcelona, the university did try to plan the schedules to make it easier for students to work in parallel, even though the students thought this was insufficiently done. As stated earlier, this may not only be for the students' convenience, since financing studies through work is the only way for many. By supporting this there will be an increase of the number of people who can enter higher education.

These findings are reflected in the scenarios on "Monday morning", "change of schedule" as well as in "finding job". The e-Me immediately notifies the student of changes that affects the next 3 days, and the e-Me also assists the student in re-planning group assignments and work. The e-Me also assists the student in finding part time job, fitting with her schedule, competence and wishes.

### **5.1.2. The "Collaborative student"**

The students act in groups in many aspects. Group assignments are felt as a large part of education, sometimes students are working in different groups at the same time. They would like more support for these group assignments, like up-to-date contact lists, tools for sharing information and support for planning work. In the courses they try to help each other if someone misses a lecture, owing to work or sickness, they share notes and other information. At some universities there have even emerged markets for good notes, where a student producing useful notes on lecture or summaries of books can get a good price for these.

This is also connected to the wishes of students to design their own education, rather than just following the curriculum of the university. Students share experiences from different course on the same subject, they also try to mix courses from different universities. They would like much more support for this, for instance public student rating of courses at different universities.

This is reflected in the scenarios for where the e-Me aides the student in connecting with the group and to manage the assignments. The e-Me also aides the student find other students who have taken courses and to interact with those who will be on the same course. There are also services for students to apply and attend courses at other universities. The more future oriented parts show how students themselves can design and share or sell new eServices.

## *5.2. Situations and scenarios*

The students point to eight important situations that can be improved. The scenarios are made out as cartoons and are far too long to be included in this paper. There are a total of 12 pages of cartoons at this point in the project. [5] These situations are summarized below:

1. Apply to university and begin studies.

The choice of education is both important and complex, as they feel it's really a choice of life. Their scenario includes the e-Me assisting them with applications, credentials and the overall process. They also point to new services, for instance stories of the lives of people who have followed different educations, as well as the possibility to form communities around aspiring and old students.

2. Monday morning.

The scenario shows the student "Nya" who is informed on Monday morning by the e-Me on her weekly schedule and some transportation problems. The further reminds her on other issues as renewal of transportation passes.

3. Mail etc.

The e-Me collects email from all Nya addresses and prioritize them according to here

wishes which includes looking for certain offers. The e-Me also notifies here of important requests from the authorities which she needs to respond to.

4. Change of schedules.

The e-Me notifies Nya that a lecture is cancelled. One of here group members suggests they use the time freed up to work on the assignment. The e-Me finds ways to contact the group so they can agree on this.

5. Forms and administration.

Nya receives a request to view and accept her pre-filled tax return form from the tax authorities. The e-Me notifies her of three Electronic Reviewers that may aide her lowering her tax. One eReviewer is developed by other students and knows a lot of tips and tricks for minimizing the tax.

6. New course.

Nya is thinking about taking a course on a special subject. The e-Me aides her in finding people how have take such courses. When she has decided on one particular the e-Me collect her credentials and make the application as well as monitor the process notifying Nya of its progress. On her acceptance the e-Me discovers information on course text books, including summaries written by other students and up dates her personal agenda with the lecture schedule.

7. Finding job

Nya wants a part time job and lets the e-Me scan various job sites and old job contacts. Nya decides on one and the e-Me up dates her CV and sends it to the employer. While waiting the e-Me keeps intense outlook after any messages from that employer.

8. Purchases

The e-Me uses Nya's preferences to monitor all offer that is sent to her. If there is something matching Nya is notified, otherwise the offers are kept in the low priority "offer box". There is also a scenario where several students team up to by new computers. Their e-Me's assist them in the process of selecting and negotiating for great deal.

### *5.3. Other findings*

Other findings from the student works shops include:

- Most students today have four or more email addresses, different for specific purposes; one "real" personal, one sacrificial "martyr mail" to use when registering on websites that is likely to generate spam, and several others issued by their universities and courses. They want the e-Me to manage all the email accounts with advanced notifications and filtering abilities.
- Students want to select courses from different universities based on course evaluations, to design their "own" degree. They want the e-Me to assist them in this. This will drive a new type of quality thinking amongst student that universities need to address.
- Students would like to see more electronic on-demand education. They want the e-Me to facilitate the possibility of students share notes, recordings and other course related information. This will drive internationalization of education.
- Some students also see a business opportunity with the e-Me. Students could develop their own services within the e-Me concept and it could form a market place and arena for students themselves.

### *5.4. The e-Me concept in perspective*

The findings above indicates a number of different characteristics of the e-Me concept. These findings are in the same line of reasoning as some other contemporary initiatives. We have

done some comparisons between the e-Me-concept and these initiatives. Due to space limitations we just present the conclusion from our comparison.

The first initiative is the *ISTAG Ambient Intelligence Vision* [6]. This vision presents four scenarios, which contain elements that are similar to the e-Me. Our conclusion is that the Aml vision clearly points in the direction of an e-Me, but the e-Me scenarios presents a more realistic and less technocratic vision, based on real needs.

The second initiative is *ePortfolio* [7]. The ePortfolio may be regarded as a “eHome” in figure 1, storing a rich set of information on the students education and learning. There are many different ePortfolio initiatives, services and software as well as efforts to create standards and interoperability. [8] These initiatives will be carefully followed and the e-Me should be able to interact with major ePortfolio systems and standards, as with other types of “eHomes”.

The third initiative is *Web 2.0* [9]. We have gone through a number of contemporary trends associated with the internet and captured under the label Web 2.0. Web 2.0 definitely points in the direction of the e-Me. Two important conclusions can however be drawn. In reverse to many other products/web-based tools on the market the vision of e-Me is 1) strongly related to realize *several* of these trends and 2) the role of *Personalization* and *User Produced Services* is more emphasized in e-Me than in Web 2.0.

The fourth initiative is *Microsoft Windows Live* and *Apple .Mac* [10]. Live and Apple .Mac are to be regarded as “eHomes” according to figure 1. The initiatives are however far more complex and does indeed offer other services, which are part of the e-Me, like the ability to collect mail from other email addresses. There is no “assistant”, however, in the sense of the e-Me. Live would be both an eHome and a communications centre as well as offering particular eServices, according to figure 1. Apple .Mac from an e-Me perspective is a storage for contacts, calendar and other import data, fitting well with being a “eHome” according to figure 1.

The conclusion is that many initiatives point in the direction of the e-Me, without taking the full step. From a technical point of view, most functions of the e-Me already exist in one way or another, like aggregated email, calendar synchronization, text message notifications etc. Therefore the challenge is not in technical innovation, but rather in “selling” the concept so that organizations choose to design their e-services utilizing the e-Me.

## **6. Business Benefits**

The projects results clearly demonstrate a demand for an e-Me. The partners point to the benefits for them as well: be it new business opportunities, improved service or cost reduction. There are also strong indications on a general need for an e-Me amongst citizens, not only students.

e-Me and the logo is a trademark and negotiations are taking place to make reality of it. The business model will be a licensing structure allowing different partners taking different roles, depending on their purpose and wants. As indicated by both students and partnering companies the e-Me can also function as a market place for “user developed services” lowering barriers for individuals and small companies to develop and market services.

Both the partners and other companies and organization have expressed an interest in developing services for e-Me. Some progress has already been made: One software company has started developing e-Me compatible software, making this their strategy for the future. One company has been formed to facilitate the academia – business connection, in the way presented in the scenarios. One major European city is negotiating the possibility of being the first issuer of e-Me’s to students in the universities there. (The business model is being developed during the fall of ’06 and is most likely going to be a licensing model with e-Me

Providers and e-Me Service Providers, somewhat similar to that of the GSM mobile phone system.)

It is possible to imagine stakeholders that don't like the e-Me concept. At first the team thought that many companies and universities would be adverse, wanting to retain the direct student relationship. Many of these however experience increasing costs for the e-services as well as strong resistance from clients against anything that could be regarded as spam, and are beginning to shift position. Both companies and universities are welcoming the e-Me concept as a solution to these problems.

## 7. Conclusions and Summary Recommendations

The projects results clearly indicate a need, want and hope for an e-Me, from a student perspective. The partners point to the benefits for them as well: be it new business opportunities, improved service or cost reduction. We also have strong indications on a general need for an e-Me amongst citizens, not only students.

The e-Me would also help drive important developments, like internationalization of education and development of a new type of "universities" where the students design their own curriculum. The e-Me would also function as a market place for "user developed services" lowering barriers for individuals and small companies to develop and market services.

We have received comments ranging from "an old idea, not interesting" to "too radical, you'll never get away with it." Discussions with the broad range of partners indicate that the time may actually be right for e-Me. Everyday sites offer increased personalization and notifications, as a response to the problems originating the e-Me. This increasing number will of course increase the demand for something like the e-Me.

As an action research project we will together with the partners via pilots try to make a reality of e-Me.

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