

e-Me, your assistant managing broadband services.

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1. Purpose of this document:

To describe a best-practice case from *E-Me consortium Borås Sweden*.

2. Country and Region:

Sjuhärad region, Sweden

3. Issue:

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. 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 the process of becoming adults, and are therefore both reflective and open to change.

4. Approach / strategies / results:

The Co-Design Approach in the e-Me Project

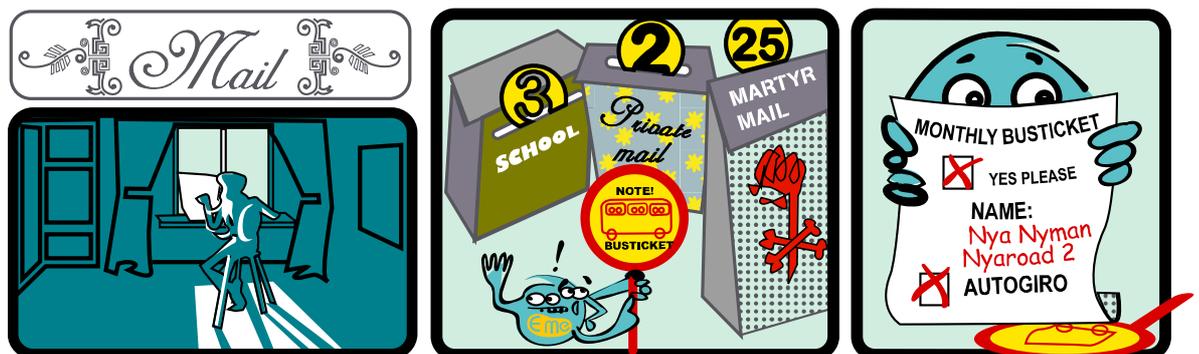
It is not always easy to know where a project originates, but a reasonable point for the e-Me story is a series of meetings between Intel, LADOK, University College of Borås (UCB) and Calistoga Springs Research Institute (Calistoga) on future e-services in higher education. Most of the participants knew one or more of the others as they had previously worked together. Choosing the Students as the “Client”, when thinking on the next generation

e-services, led to the idea of a personalized “electronic home space”. VINNOVA granted funds for a pre-study. In the pre-study more than 20 students were engaged and three basic Co-Design Scenarios were developed.



One of three original Co-Design Scenario illustration: e-Me retrieve and sorts incoming messages, offers and other matters. (From the project application 2005-04-18)

During this initial work a number of organizations were approached using the networks of the participants. The Co-Design Scenarios were used to discuss the concept with them. The resulting application was backed up by more than ten partners. In the application the partners stood for 50 % (which was required by VINNOVA) of the finance of the whole project. The application was granted and at the following the Co-Design Approach we engaged more than 40 students in workshops at Stockholm, Borås and Barcelona. In these workshops the original assumptions for the project were verified and the original Co-Design Scenarios were interactively developed together with the students into ten completed stories on the students’ ideal future electronic services. [1]



At 11 a.m. Nya logs onto her e-Me. 3 mails in the schoolbox, 2 private ones and 25 in the “Martyr-mail” inbox. Nya calls the address used when surfing for “Martyr-mail”. e-Me reminds her again about renewing her monthly bus ticket. Prepared renewal form is attached.

Part of a developed Co-Design Scenario showing e-Me sorting messages and notifying its student on pending matters. The Co-Design Scenarios are 12 pages of cartoons (from [1])

These Co-Design Scenarios have been used in the work with partners. Many partners engaged in the project as they were interested in learning about what students wanted the future to be like. A number of partner workshops have been held to discuss various consequences and possibilities for partners, where the Co-Design Scenarios were viewed as a “market survey”. The strong centering on the students as *clients* of the e-Me allowed partners to focus and to take an outside view of their organizations.



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This supported the stakeholders to re-examine their assumptions, as stated above. For example the publishing house Liber said that they didn't think they could build a good enough electronic market place on their own as they feared to be perceived as spammers. This was a surprise to other partners as they expected each company to strive towards "owning" the "customer dialogue". Another example is that Microsoft said that given their experiences with passport etc they didn't think they could get a global acceptance of a proprietary electronic identity scheme and that they may choose to be part of joint effort to make head way. This was a surprise to some stakeholders as they assumed that Microsoft was aiming at building their own global identity scheme.

These re-examinations of assumptions were critical for many partners, who at the outset viewed the e-Me as a far reaching futuristic idea, in starting to regard it as a viable concept.

These discussions resolved many perceived conflicts and have already led to several joint business ventures. For instance LADOK, CSN, Mecenat and the students unions have developed a joint e-service for verifying, if a person really is an active student, a service now being used both by companies offering students discounts and authorities. The Co-Design Scenarios allowed these partners to examine the potential use of such collaboration between commercial actors and government entities normally perceived to be dangerous and difficult.

The developed scenarios were verified by a questionnaire sent to 16 000 students in Sweden and we got more than 3.200 answers back. In the questionnaire we asked the students to rank different kinds of e-services that would be preferred [2]. These kinds of results were brought into the partner workshops and were an important incitement for ensuring an interest from the partners. The largest partner event arranged was in Stockholm at the end of the first project year, an e-Me symposium, to which desired key personnel from partner organizations were invited. The symposium had approx. 100 participants.

During the fall 2006 an e-Me pilot prototype was developed, using the standard IS development methodologies RUP and DSDM¹ and in Jan. 07 approx. 120 students from University College of Borås were invited in the projects as co-designers, using the pilot e-Me in their daily work. Several partners put up additional funding. This prototype covered some core services, such as mail aggregation, calendar, contact management, archives and mood management. The e-Me is accessible both on the web and by using the mobile phone as a remote control. The prototype also covers interaction with single service providers (both official and private organizations) and match-making organizations.

At the time of writing the pilot test have recently been concluded and the results point at even this tiny version of the e-Me is sufficient to be of great value to the students. Therefore a group of the partners have already started to invest in a realization of the e-Me concept.



¹ Dynamic Systems Development Method

5. The e-Me pilot

Technically e-Me can be conceptualized as an IT-artifact for integrating different information services. e-Me is an entity that "lives in the cloud" (the e-Me galaxy). e-Me is running on servers that are connected to internet and mobile phone networks 24/7 and acting on behalf of its user. At this version the main access to the e-Me is through a web site, while the e-Me is also using text messaging by using the mobile phone to communicate with its user. The different critical functionalities of e-Me has been divided into several areas such as the individuals interaction with the e-Me, the core functionalities of e-Me as such, e-Me interaction with other e-Me's, e-Me interaction with the information society, and e-Me interaction with single service providers as well as with match-making organizations.

The core of the e-Me consists of the following components:

- *Calendar management*, in which the user's calendar could be shared with other e-Me users' calendars. Different categories of bookings could be highlighted by using different colors.
- *Mood management*, in which it is possible to set and manage in which mood the e-Me user is. Three possible moods have been implemented in the prototype; private, meeting and open.
- *Mail aggregation*, in which mail could be popped from different sources and distributed dependent on the mood that is set.
- *Contact Management*, in which contacts can be grouped into different categories and a status of the contact, could be set in relation to the possible moods.
- *Archives*, in which files (of different types) could be stored and shared with other e-Me users.
- *Community*, where the stakeholders; users, developers, e-Me project management and service providers can discuss the e-Me, suggest improvements/additional services and share experiences.

In the left part of figure 2 different "blobs" (views) of the e-Me is depicted. In the right part of the same figure one of the blobs is expanded.



Figure 1: The e-Me with all its “blobs” and an example of one of the blobs of e-Me

As seen in figure 1 there is also a blob called assignment. This blob is where the user manages all tasks that are assigned to the e-Me. So far we implemented the possibility for e-Me to receive study results (from Ladok – a national system for reporting study results), get the schedule into the calendar (from NeverLost – the school’s scheduling system), receive this weeks lunch menu, as well as matching desires and needs of offers from organizations with students discounts (from Mecenat).

e-Me also supports device independency in the sense that e-Me gives a possibility for the user to interact with his/her e-Me via a web-browser or his/her mobile phone. This aspect of mobility also means that the e-Me could notify the user concerning different events (such as emails from contacts with the right mood, changes in schedule, matched offers, changes in the study results etc.).

A lot of energy has been put on the graphical interface. The project has been striving to avoid developing the e-Me towards what looks like interfaces that exists today. e-Me is not an agent, not a firewall, not a search engine. e-Me is an e-Me. The main guiding principle for interface design has been to hide all, or as much of the complexity behind integrated service approaches.

6. Relevant keywords:

Integrated e-services, Co-design, e-Me, electronic assistant, stakeholder involvement

7. Main impacts

Meanwhile, the development, use, and the test period, a formal and formative evaluation plan was also set up. This included:

- an on-line survey (based on a modified version of UTAUT [3])
- contribution in the on-line community by users and developers
- documents from weekly project group meetings
- close interaction with the student champions and ambassadors
- e-Me user narratives (the students where asked to write a postcard to a friend explaining the benefits and consequences of an electronic assistant such as e-Me)

Individual and group interviews with the developers where also done in order to understand the role of scenarios and storyboards in requirements specification and to investigate the reasons for why bugs are created in software. Different e-Me transactions performed by the e-Me users has been logged. There have also been interviews with other stakeholders performed in order to get their viewpoints on the development of e-Me. The evaluation is still on going.

During this integrated development, use and evaluation of e-Me we can conclude that there has been a lot of interaction between different stakeholders. Probably the most important feature of this whole setting is

that the community space is a part of the e-Me system. This created the possibility of having users communicating reflections, changed requirements and identification of new usage situations. These comments created a starting point for other stakeholders to become involved in the dialogue. This co-design setting meant that several kinds of stakeholders had their say about the comments made by the users. In the pilot study, stakeholders such as InnovationLab (the developers), some service providers, associated researchers, designers, and the project management were part of the community. This meant that before efforts of a new version of the e-Me system were decided to be invested in several stakeholders had their say. From the pilot study, there are several examples of users that desire certain functionality, but the project management and the developers claim that the cost in relation to the value generated was too high. The Pilot study has a rich output of experiences and results; here we will list a few of the more important ones. These experiences and results express desires from different stakeholders as well as the use of different instruments (such as e.g. the e-Me community) for driving the integrated development, use and learning process forward. The pilot test reports that the e-Me concept is working well and a core group of partners are planning to turn the e-Me into reality. Some important experiences and results are:

- The students want the e-Me to continue to grow and develop. As indicated from the student workshops with scenarios students felt that e-Me was a step in the right direction of what they needed and they want the prototype to evolve further. The UCB management also has recognized the value of e-Me and a developed test period for new groups of students are financed.
- This setting delivered experiences that e-Me is worthwhile developing to a full-scale-situation (proof-of-concept). Interestingly, the students developed experiences that integration was to prioritize before extreme high functionality of each component (even if the functionality of each component needs to be good enough). Further, it should also be noted that the students appreciated the important uniqueness in e-Me was its ability to reflect the e-Me user's personality (such as e.g. the user's mood) to a high extent.
- The e-Me community as a powerful learning arena for use and development of IT-artifacts. The e-Me community was important for the development team at Innovation Lab as well as for the students as end users of e-Me. It was also important for the research team to follow the arguments and ideas that was created in the community. Finally the comments from the student ambassadors that they learned a lot about IT-development on by participating in the e-Me community indicates that a community of this type can be used as a pedagogical tool for education of students in IT-related subjects.
- The importance of the first materialization of a new concept. We got a lot of feedback from the scenarios as such, and the materialization of e-Me greatly widened the interested audience and new insights of

new usage situations of e-Me came forward. In this process, the media was important.

- The importance of a group of e-Me ambassadors as introducers and coaching activities. As we have seen in a number of other projects with new technologies, it is important to use a coaching approach. In this project, we did use student ambassadors and they really were the heart of the pilot setting. As one of them said “I learned as much on this project as all other studies together”. The pilot would not have been possible without the student ambassadors.
- The student situation as one of many application areas for e-Me. Almost in every discussion with new stakeholder groups a new idea about application areas for e-Me arrived. e-Me for homecare, e-me for immigrants, e-Me for tourists, e-Me for entrepreneurs, and e-Me for knowledge workers are examples of such ideas.
- The usefulness of having the development team, InnovationLab, involved as one co-designing party in the process. Students expressed how good it was that their needs were listened to and how fast some of the ideas to changes could be implemented.

In order to get this environment working we found it crucial that the students got the feeling that the e-Me became their concern. To foster such feeling a number of crescendos, such as new releases, were used in order to ensure continuous attention towards e-Me. These releases were results of student-initiated discussions held among a number of different stakeholders. The students were also stimulated in distributing usage situations to each other that they had experienced when the e-Me would be of benefit to use as well as identifying new usage situations that could be of use.

8. Conclusions and Summary Recommendations

A critical success factor of Network Innovation is to bring many differing people, interests and perspective into an innovation process, still focusing the end client/customer/citizen. This paper presents a few challenges to traditional Project Management. In particular this concerns:

- The ability to manage projects with an unknown outcome. Innovation projects more or less by definition start with unclear or unknown outcome.
- The ability to centre innovation on the client/customer/citizen. Even in single organization projects, focusing customer needs is a challenge. This escalates dramatically when project encompasses multiple organizations.
- The ability to manage conflicting interests. Multi organizational innovation has to encompass multiple, often conflicting interests.

The presented Scenario technique in the Co-Design Approach enables such a process, allowing stakeholders to re-examine their assumptions and for

new ones, in a dialogue and the case demonstrates how this supports the Network Innovation.

We suggest that future research focus on:

- Co-Design Scenarios as requirements specifications in relation to “traditional” IS development methods
- How iterative, scalable processes like the Co-Design Approach can be used to give structure to the early phases in project that are often not covered in contemporary project management
- How the Co-Design Scenarios can be further developed to even better support the re-examinations of stakeholder assumptions.

9. References

1. Albinsson, L., Forsgren, O., & Lind, M. (2006). *E-me stories and scenarios – the ideal electronic galaxy of the student*: School of Business and Informatics, University College of Borås.
2. Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. New York: Basic Books.
3. Venkatesh, V.; Morris, M.; Davis, G.; Davis, F, (2003) “User acceptance of information technology: Toward a unified view”, *MIS Quarterly*, 27(3), 425-478.

10. Attachments

www.e-me.se

Confirmation of publishing allowness

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