The I-Mail Project

Progress Report – 04/2001

Last modified on 2001.04.05 by Leo Burd

**Introduction**

The goal of the I-Mail (Inclusive Mail) project is to develop an e-mail client targeted at people with mental and/or physical disabilities.

The challenge is to develop something as simple to use as possible, providing the appropriate amount of feedback and support to specific users. For this reason, the I-Mail interface has been built around pictures and vocabulary that are familiar to the user. Other challenges include dealing with an audience with very unique characteristics, specific technical constraints, and the novelty of the field itself.

![Figure 1 - The I-Mail picture-based interface](image)

In order to deal with these problems, the I-Mail development requires not only the involvement of assistive technology professionals, but also the constant interaction with the disabled in their real settings. Moreover, it requires the application of universal accessibility guidelines and a continuous assessment of the right level of personalization and scaffolding to be provided for each user in different situations.

In addition to helping people with disabilities have a more active participation in our society, it is worth mentioning that the I-Mail is expected to provide an easier entry point to the Internet for kids, the elderly, or anyone who is in the process of learning to read or write.
**Related work**

Currently, there are many communication devices developed to address the specific needs of the disabled. They consist mainly of special purpose text editors and picture-based tools that execute predefined operations upon the press of an associated button.

However, there seems to be a lack of Internet communication tools for this population. The only ones we could find were PapoMania, a chat tool developed in Brazil for people with Down Syndrome (http://www.caleidoscopio.aleph.com.br/), and Inter_Comm, an e-mail client for people with special needs. Inter_Comm is part of an European Community project entitled ALDICT (http://www.inclusion-europe.org/aldict/) and is been developed by Widgit Software LTD. (http://www.widgit.com/). In 2001, Inter_Comm is supposed to be released in US market.

In our opinion, Inter_Comm is a very complete and mature product. However, its interface seems to be overcomplicated to part of the audience we intend to address and does not seem to be attractive enough for non-disabled people decide to use it. We believe that, in order to facilitate true inclusion, tools should be built according to the principles of universal accessibility (http://www.universaldesign.org/) and be the least discriminatory as possible.

**Our approach**

The development of the I-Mail follows the Task-Centered Design approach as described by Lewis and Rieman (http://home.att.net/~rieman/jrtcdbk.html) emphasizing a close user participation in the entire process. However, most of the traditional techniques proposed cannot be applied directly to users with cognitive disabilities.

In order to minimize this problem, we decided to base our initial work on expert advice and user observation. As soon as we have an operational prototype we will be able to carry real tests with disabled users.

We foresee the I-Mail as a system composed of the following components (see figure 1):

- **I-Mail client**, which will provide basic e-mail functionality to people with disabilities
• **Mail component**, that will deal with e-mail message transmission and storage
• **Text-processing engine**, which will add pictures and sound to existing text messages
• **Pictionary**, that will handle picture libraries
• **Address book manager**, to control possible message destinations
• **Profile manager**, that will provide means for managing users and configuring various I-Mail settings.

**Current status**

As we believe the quality of the user interaction with I-Mail is both the most challenging aspect of the system and the key for its success, at this stage of the project we are developing mockups of the interface and clarifying specific user requirements.

More specifically, so far we have developed a static mockup of the I-Mail user interface and are currently working on the Profile Manager prototype. The I-Mail mockup was developed with intense collaboration of special education teachers from the Boulder Valley School district.

The Profile Manager prototype is being developed with the help of experts from the Denver and Boulder area. We have carried seven interviews with them and visited their organizations. We have also identified and described basic tasks to be supported and are now defining scenarios and mockups to address them.

Once we finish the I-Mail and the Profile Manager mockups we will have a very precise definition of the system’s user interface. As mentioned above, with the mockups done we will be able to start developing the real product and carry tests with disabled users.

**Concerns**

So far, we have identified the following points:

• The need for an in-house expert in disabilities and augmenting technology. Most of the basic questions we have could be solved with the help of an expert like Anja working with us. It is very time consuming for everyone if we have to go to the schools all the time to ask for simple things.

• The need for an official partnership with the Boulder Valley School District. Even though teachers have been extremely collaborative, we understand that they are very busy and that we are using time that they would otherwise use for their personal activities. It would be very nice if they could have the I-Mail tasks as an official part of their duties.

• The usage of commercially available software. Even though there are no official standards for picture libraries, most people seem to use the ones provided by Mayer-Johnson (http://www.mayer-johnson.com/) and other major assistive technology developers. Ideally, I-Mail should be compatible with them. This may require an official agreement with these companies.

• Software distribution. Almost every teacher we interacted with asked how much the software would cost and how it is going to be advertised and distributed. Ideally, it
should be made very accessible, but how distribution policies are going to be implemented is something beyond the scope of the I-Mail development team.

- Undergraduate student’s involvement. It would be very nice if we could have undergraduate students working in the team. In special, the developing of the real product will require more people than we have available today and this may provide a good experience for the students.