

The Development and Testing of gReader: A Universally Designed, Device-Independent Email Client

Lindsay Grace
Computer Science Department
University of Illinois, Chicago
Chicago, Illinois, United States

I. INTRODUCTION

The ubiquity of email messaging necessitates the need for anywhere, accessible design. As such, this research project proposes a plan for offering access to e-mail that is largely platform independent. The project is the design of a Text-To-Speech (TTS) application that reads e-mail to users, records the messages in two popular media types for transfer to portable entertainment devices (PET) and portable communications devices (PCD). The application is named gReader. As part of the research, a user task analysis was conducted on eight users ranging from 19 to 34. These users were surveyed for their interest in the developed application, likelihood to use the gReader product and their desire to communicate through electronic messaging. According to the feedback gathered during the user task study, the product seems to meet the needs of users but interest in the product is merely moderate. The prototype succeeded in delivering email content in an easily comprehended manner.

This document describes the proposed solution, the final implementation, and the results of a preliminary user-task analysis.

BACKGROUND

While varieties of electronic messaging solutions have flourished in the past 10 years, email messaging stands out as the most commonly used. The benefits of all electronic messages are clear: low cost and immediate delivery. While most electronic messaging techniques offer their respective benefits, email messages afford the largest set of benefits. Email messages afford the ability to archive conversations, unlike instant messages. Email messaging affords the ability to communicate comprehensive amounts of information easily, unlike text messages. Email is the preferred mode of electronic messaging for delivering business information and personal information to be archived.

Email messaging has become a common means of communication in the wide spectrum of our daily lives. Reading email can be accomplished on a variety of devices. These device fall into two distinct categories; portable communications devices and portable entertainment devices.

Portable Communication Devices

Portable communication devices (PCD) are electronics whose primary functions focus on the delivery and receipt of a communications. These devices include traditional portable phones, portable data assistants (PDA's), and the hybrid of both technologies commonly known as Smart Phones. These device offer portable access to email and common instant messaging technologies via small devices.

The more advanced PCD's offer the ability to connect the device to a more powerful computer to synchronize content between the PCD and the host computer, download content via the host computer, or adjust settings on the PCD.

When designing user interface systems for these devices, the typical hardware limitations include small screen size, less than ideal data entry methods, and a scaled down processing, storage, and network capabilitiesⁱ. The design of software systems for these devices typically require device specific coding practices. Although many devices have adopted standard operating systems such as Windows Mobile the hardware and processing limitations typically require device specific accommodations.ⁱⁱ

The most popular devices in the PCD category include Blackberry Smart Phones and iPaq portableⁱⁱⁱ

Portable Entertainment Devices (PET)

Portable Entertainment devices are primarily designed to entertain users through a multi-media experience. The most pervasive PET technology are music players such a as Apple's iPod. PET technology also includes portable gaming devices such as the Sony PSP.

Like many portable communications systems, these devices typically run on a proprietary operating system that requires hardware specific software development. These devices typically offer the ability to connect to a more powerful desktop or laptop computer for added functionality as well.

Please contact Lindsay Grace for the remainder of this research. This web version includes only the first of the 7-page article

References

ⁱ Tomonari Kamba, Shawn Elson, Terry Harpold, time Stamper, Piyawadee Sukaviriya, Using small screen space more efficiently, CHI 96, April 1996

ⁱⁱ Yoshiki Ohshima, John Maloney, Andy Ogden, The parks PDA: A Handheld Device for Theme Park Guests in Squeak, OOPSLA '03, October 2003

ⁱⁱⁱ David B. Rondeau, For mobile applications branding is experience, Communications of the ACM, July 2005