CellMailGraph: Email Visualization On Handheld Computers

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1. INTRODUCTION

Information visualization applications provide quick and pleasing access to information that may result complex or dense otherwise. They deal with large sets of data that remain mostly constricted to the academic or research environment, rarely reaching a broader audience. In order to make information visualization a personal experience, it is needed to use content that is meaningful to an average user. Email is a perfect body of data to visualize because it is a widespread communication tool for both personal and professional use. Also, it suffers from its own success. We deal with a massive amount of emails, feel pressured to respond quickly, and fear losing track of messages.

Cell phones and PDAs have turned into the most personal computing devices available. They with us at all times and help us to organize our social life. They present challenges in the development of applications, not only because of the small screens and tiny keyboards, but also because of its varied and unpredictable context of usage.

The current applications to check email on mobile devices adapt mail clients for bigger computers to these small screens. Handheld computers demand new and innovative tools to match the interaction to the context of the mobile device. Nowadays, these devices support multimedia content and rich graphics that makes the experience of data visualization on this platform possible.

2. THE APPLICATION

CellMailGraph is an application that graphically represents unread emails in a mailbox. The application is not a mail client, but a monitoring and alert system to provide quick access to information we care about.

The design guidelines followed for the development of the application were simplicity over complexity, personalization options, appearance observant of the size and graphical constraints of the displays, design for limited and split attention, use of metaphors and design for enjoyment. J2ME was the technology choice to develop the client since it is becoming a standard for applications on handheld devices, and therefore allows for a larger audience.

The user determines his own settings. Through a series of screens, he specifies an email account to track, a list of contacts and/or a series of keywords. The contacts are defined by their email address and a color that will identify them on the screen later on. This information is stored in a database so that the user can reuse or modify it without having to re-enter his settings.

The current visualization uses the metaphor of a 'Big Bang' of emails or explosion of dots. Simple shapes and bright colors are the central element in the design of the graphical map, so that the information can be grasped in a glance. The current visualization features dots of different sizes and colors distributed on a series of concentric rings.

Each dot represents an unread email. The most recent unread message in the inbox throbs. The concentric rings comprise a period of 24 hours. The unread emails older than a day stack at the edges of the image. Bright colors identify the tracked contacts and messages sent by unmonitored email addresses are grey. As dots get older they move farther from the center and they become more and more transparent. The dots are proportional in size to the number of keywords that they match. These terms found in any of the messages are written to the screen in the color that defines the sender.

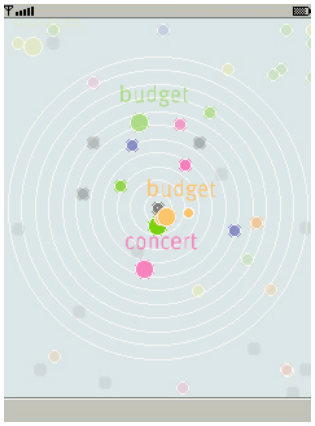

Figure 2.1 Visualization

CellMailGraph participates in the emerging trend of ambient data applications on cell phones. It can provide always-on information about the state of an inbox that alerts users about the need to check their email.

3. CONCLUSION

Mobile application development raises issues that both carriers and manufacturers need to work on. There is much room for the improvement of CellMailGraph. More mailbox data can be represented graphically. Also, a set of graphical templates can be offered for the user to choose. Today CellMailGraph makes data visualization useful to an average user and responds to the need of handheld devices applications to serve their specific context of usage.

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