

Expressions: Context-Enhanced Mobile Blogging

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ABSTRACT

Blogging is used by an increasing number of people for a wide range of purposes. An especially rapidly growing field is that of mobile blogging – blogging from portable devices “on the go”. In this position paper, we identify requirements and challenges in mobile blogging settings. We also describe how the concept of context can be used in mobile blogging applications to enhance user experience. Based on this, we present the initial design for *expressions*, our proposed suite of applications for context-enhanced mobile blogging.

Categories and Subject Descriptors

H.5 [Information Representation (HCI)]: Miscellaneous; J.9 [Computer Applications]: Mobile Applications—*Nomadic Computing*; J.9 [Computer Applications]: Mobile Applications—*Location-dependent and sensitive*

General Terms

Human Factors, Design

Keywords

context awareness, location awareness, mobile computing, blogging, personal knowledge management

1. INTRODUCTION

When the word *weblog* (or shorter, *blog*) was coined in 1999, it was used for a web page where “a weblogger ‘logs’ all the other Web pages she finds interesting”¹. Today, people are using blogs for many purposes: to document their lives; to provide commentary and opinion; to express their emotions; to articulate their ideas through writing; and to form and maintain community forums [3].

The rise of blogging as a widespread medium for publishing content on the Web was facilitated by the appearance

¹see Jorn Barger’s Weblog FAQ at <http://robotwisdom.com/weblogs>

of blogging systems like LiveJournal² or Blogger³. These systems significantly lowered the threshold to publishing for users with low technical experience [1]. Relieving the bloggers from having to write HTML manually, these systems introduced online editing interfaces that make it easy to focus on the content of blog entries rather than the technical side.

As entries evolved to having richer content, the navigational structures also became more sophisticated. In addition to timestamp-based navigation, current blogs typically provide navigation by classifying keywords (often called *tags*).

Especially bloggers who post entries to document their lives need a way to blog about situations while they are experiencing them. The widespread availability of camera cellphones led to new ways of blogging: *Moblogging* is a term coined in 2002⁴. It refers to maintaining a blog that contains content from mobile devices like camera cellphones. A big drawback of current moblogging services is their simple user interface which usually results in a publish-only editing style.

In this position paper, we present the motivation, requirements list and initial design for sophisticated mobile blogging software. Sect. 2 consists of two user scenarios in the mobile blogging domain. Sect. 3 derives a list of requirements from these scenarios and discusses the concepts of context that are applicable in mobile blogging. Sect. 4 gives a high-level overview of the design for the *expressions* application suite that we propose based on the requirements. Sect. 5 briefly describes the challenges we expect to encounter from a user interface point of view.

2. USER SCENARIOS

In this section, we describe two fictional mobile bloggers, Alice and Bob.

Travelling Restaurant Critic. Alice has a job that requires her to travel a lot. She has a blog where she posts reviews of cafés and restaurants she visited during her travels. She usually writes these reviews when she is back home – she does not have a laptop, and the towns she usually visits do not have Internet cafés.

²<http://livejournal.com>

³<http://blogger.com>

⁴see Adam Greenfield’s blog at http://www.v-2.org/displayArticle.php?article_num=59

She is writing less reviews than she would like to, because sometimes she does not take notes directly and then she has forgotten too much about the place by the time she can start to write.

Alice owns a smartphone that has an integrated camera. She takes the pictures for her reviews with the integrated camera. She is currently using moblogging, but she thinks it is too limited because it only allows her to submit pictures and a small amount of text. What she would really like to do is to be able to write longer reviews on her phone, and to also be able to see what she has written in the past about other places in the vicinity.

She is currently using GPS to get the coordinates of where she is, which she includes in her entries.

Alice uses tags to classify her entries. She is currently comparing her new entry to the old entries in order to find a proper set of tags for the new one, which she thinks takes an unnecessarily large amount of time.

Mobile Knowledge Worker. Bob is a PhD student. He has a private research blog to keep track of his ideas, links to articles he has read or wants to read, and other notes related to his studies. He is using a blog for this so that he can use it from anywhere he has Web access.

He mainly posts entries using the blogging client on his laptop. Not all entries are published immediately since he sometimes blogs in places where he doesn't have an Internet connection. His client keeps a copy of each entry he has posted using the client. He finds this useful since this gives him access to his old entries when he's not connected to the Internet.

Whenever he does not have the laptop close by, Bob uses his PDA to write new entries. As he cannot connect the PDA to the Internet, he has to transfer the entries over to the laptop before posting them. He wishes he could have all entries he ever posted available both on his PDA and his laptop.

To read entries he posted in the past, he would like to be able to navigate not only by the timestamp of the entries and by categories, but also by the place he was at when he wrote the entry and possibly by the person who pointed him to information he used in an entry.

In addition to this, he wants to be able to easily access old postings relevant to the one he is currently writing. Then he could tag the entry with the same tags as the previous ones as well as easily link to older entries.

When Bob posts a link to his blog, he looks it up on technorati⁵ to find other people's blog entries that contain the same link. He usually also uses the tags he found on technorati for this link for his own entry.

3. REQUIREMENTS ANALYSIS

From the scenarios in Sect. 2, we can identify three broad groups of requirements: (1) disconnected blogging, (2) context-enhanced retrieval and (3) context-enhanced editing.

The requirements in each of these groups are described in the first subsection. A recurring concept in these descriptions is

⁵<http://technorati.com>

that of the *context* of a blog entry. The second subsection examines this concept more closely.

3.1 Requirements List

This subsection describes all requirements we identified from the user scenarios. We also point out which of the scenario(s) each of them has been derived from.

Disconnected blogging. This group comprises all requirements that arise from the special characteristics of the mobile setting. Namely, these characteristics are non-permanent internet connection and limited capabilities of portable devices.

1. Support blogging from a wide range of devices: cellphones, PDAs, laptop and desktop computers (Alice, Bob).
2. Have offline copies of all entries on all clients (Alice, Bob).
3. Make it possible to write an entry, save it, and publish it later (Alice, Bob).
4. Make it possible to publish an entry through another client (Alice, Bob).

Context-enhanced retrieval. This group focuses on improved retrieval of entries made in the past.

5. Show entries written in or about places close to the user's current location (Alice).
6. When viewing a specific entry, display older entries which are linked and newer entries which link to the currently viewed one (Alice, Bob).
7. Retrieve old entries based on their location (posted at/posted about), time, tags or other metadata (Bob).

Context-enhanced editing. In addition to the retrieval requirements described in the previous group, editing can be enhanced by taking context into account.

8. Show older entries which are similar to the entry currently being written (Bob).
9. Suggest tags for a new entry based on tags used for similar old entries (Alice, Bob).
10. Suggest tags for a new entry by looking up tags for referenced links (Bob).
11. Insert the user's current position into an entry (Alice, Bob).

3.2 Context in Mobile Blogging

Looking at the requirement list in the previous subsection, we can identify several concepts of context in the mobile blogging domain (see Table 1 for an overview).

Firstly, we can distinguish between *user level* and *entry level* context: Some of the concepts apply to the current situation of the user, while some concepts apply to a given blog entry.

Another distinction we can make is the *dimension* of context. On the one hand there is "classical" context, namely the coordinates of the user in space and time at the time

	user level	entry level
temporal context	yes	yes
spatial context	yes	yes
text-/metadata-level context	–	yes
link-level context	–	yes

Table 1: Context in Mobile Blogging

he/she is using the software (compare [2]). On the other hand, the context of a given blog entry in relation to location and the point in time can be considered.

Furthermore, new dimensions of context become apparent in the mobile blogging domain when the context of a given entry is examined: A blog entry can be seen in the context of similar or related entries in the same blog, where similarity or relation can be measured at the text level, the metadata level (e.g., tags) or at the link level. Similarly, a blog entry's context also contains similar and related entries from other blogs.

To our knowledge, these new dimensions of context are not supported in existing blogging software, even though they could considerably enhance the user experience of bloggers.

4. PROPOSED DESIGN

In this section we propose the design for *expressions*⁶, our suite of application for mobile blogging.

Figure 1 shows a typical scenario. The *expressions* suite consists of two clients, which both can be used to post entries to a blog. There are two kinds of clients: one intended to run in limited environments like PDAs and cellphones, the other intended for rich clients like laptops or desktop computers. Users can use either one or both kinds of clients depending on the devices they wish to use for blogging. In addition to communicating with the blog, clients can synchronize published and unpublished entries with each other. The arrows in the diagram indicate the data flow between the participants.

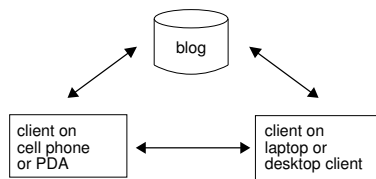


Figure 1: Data Flow Between *Expressions* Clients and a Blog

By downloading blog entries to both kinds of clients, we can have an offline copy of each blog entry on each client. This makes it possible to view the entries without going online, which is especially important for portable devices.

Synchronization between clients serves several purposes: It makes it possible to post entries from a device that temporarily or permanently cannot connect to the Internet (by synchronizing the entry to a device with Internet connection

⁶<http://expressions.sourceforge.net>

and posting it from there). It also cuts down on synchronization time over the Internet. Finally, it allows the user to continue editing an entry on another device – for example, a user might start an entry on his/her cellphone but finish it in a richer editing environment.

5. CHALLENGES

This section gives a list of challenges that we anticipate for the development of the *expressions* applications based on the requirements and the proposed design.

The most obvious challenges are those imposed upon us by the limited resources of PDAs and cellphones. Their most severe restriction is the amount of available screen real estate, but they also have limited storage capabilities and processing power. On the other hand, they have the advantage of being portable. The user experience of the two kinds of clients should be as similar as possible. At the same time, the different set of advantages and disadvantages of the targeted set of device types should be taken into account.

The location of the user can be obtained in various ways. We are planning to support data from GPS devices, cell ID information from cellular networks and information derived from the network environment of the client (for example, ESSID). If it is not possible to automatically determine the location, the user can enter it him-/herself. These different kinds of location information will have to be presented in a uniform way that is meaningful to the user.

To find entries similar to the one being written, we will have to find a suitable measure of similarity. Another open question is how to display related entries in a manner that maximizes usefulness for the user impeding him/her.

To meet these challenges, we will build on existing research on mobile interface design and information retrieval.

6. CONCLUSIONS

In this position paper, we discuss the requirements and challenges for mobile blogging applications and present the initial design of the *expressions* applications suite. In addition, we show that context in the mobile blogging domain transcends the usual definition as the coordinates of the user in time and space as the context of the individual blog entries also plays an important role.

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