

Mobile LifeDiary™ : True Life Management Service

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ABSTRACT

Recently, mobile devices penetrate people's everyday life and become personalized necessities of human's life. Therefore, people, today, always carry mobile device anytime and anywhere. Given the current lifestyle, the present paper believes that mobile device evolves to personal life recorder for caching everyday life. The LifeDiary™ creates daily activity automatically in a time line and allow to share their memories through online. In addition, p.c. client encourages users to generate their contents simply given simple template. Mobile LifeDiary™ encourages users to create, synchronize, and share their everyday life.

Categories and Subject Descriptors

H.5.1 [Information Interfaces & presentation]: User Interface – *User-Centered design, Graphical user interfaces (GUI)*

General Terms

Design, Human Factors.

Keywords

Lifecaching, social networking, blogging, posting, feeding.

1. INTRODUCTION

Collecting! Human beings (fueled by a need for self-worth, validation, control, vanity, even immortality) love to collect and store possessions, memories, experiences, in order to create personal histories, mementoes of their lives, or just to keep track for practical reasons. And with the experience economy still gaining ground -- with consumers more often favoring the intangible over the tangible -- collecting, storing and displaying experiences is ready for its big moment. Thanks to the onslaught of new technologies and tools, from blogging software to memory sticks to high definition camera phones with lots of storage space and other 'life capturing and storing devices', an almost biblical flood of 'personal content' is being collected, and waiting to be stored to allow for ongoing trips down memory lane. The present paper dubbed this trend 'life caching': collecting, storing and displaying one's entire life, for private use, or for friends, family, even the entire world to peruse. The 'life caching' seems to

already penetrate to today consumer market. For example, Microsoft's SenseCam, Nokia's LifeBlog, Sharpcast, Google's Picassa, and Apple's iLife are all umbrella of life caching concept. The result from market research implies consumers' working environment, which lead to develop current market products that has a limitation for ensuring seamless user experience in deploying life caching service. Because a radius of life of people, today, is much expanded than ever, which needs more flexible and matrix environments to the people. It implies that the people want to work or enjoy without physical barrier even if they are given in different contexts. The authors believe that next of life caching goes mobile. Because paradigm shift due to network technology has happened to the current era that provided human's nomadic nature. Today, a mobile device embraces various features and becomes convergence device that connect to other devices. It implies the mobile device is the best devices that record and share everyday life. In this vein, the authors began to investigate human life trend dealing with basic needs, mobile users' future needs, and recent emerging technology that might be applied to mobile Internet service from the next chapter.

2. APPROACH

Our approach is close to the general design process: Background research- concept development - detail design - implementation and prototyping to test- iteration. This process was beginning with research on people's context – user, business, technology- which derived to find users needs given emerging technology and business model.

2.1 Background Research

The social and cultural trend research was conducted dealing with human's innate needs. The results extended to grab insights and main stream in human life. The main keywords from research were consistent to Maslow's hierarchy of needs: self esteem and belonging. Recently, people own at least one personal media "blog/ minihompy" for keeping personal memory and presenting his presence to social entity. It creates new relationships between bloggers and minihompy users and share individual life moments with one who want to look at. From desk research, the authors developed the figure 1 presenting human's life mega streams.

To drill down users needs dealing with belonging and self esteem/ expression, additional user research methodology including FGI and Informal Interview was conducted under habitual process. The samples for user research were all paid participants who spend times for personal blog and minihompy. Because the authors assumed that the Internet

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behaviors collecting photos and writing a diary to everyday life are related to self expression which is a pinpoint to connecting one who has same identity.

The figure 1 is summary of desk research results dealing with life trend and figure 2 is summary of informal interview.

Life Trend Review

<p>Life Caching Collecting, storing, and displaying personal histories, mementoes of their lives or just keep in track for practical reasons.</p> 	<p>Self-Expression People, nowadays, want to realize themselves and want to identify their presence</p> 
<p>Blog Media Preference to personal media rather than mass media for information sharing</p> 	<p>Information Sharing For people's individual or community's purpose, they are always want to get information</p> 
<p>Virtual Relationship They want to communicate and meet new many people who has same interests or tendency through virtual community regardless social status or purpose</p> 	<p>Human Network People always try to connect another with their predefined social network and want to expand network for their purpose</p> 

Figure 1. Life Trend

In figure 1, the first column shows hot issues to the society. People have life caching devices collecting the moments and save them on personal media “blog”. It provides a place for keeping memories and connecting peoples. Second column explains human innate nature obtained from desk research. It shows people want to express their identity and want to belonging in any tribe. And they wanted to share contents for ensuring their presence. The keywords are self presence/expression and belonging/network.

User Study (Informal Interview / Survey)

Overview

Method: Informal Interview / Survey
 Purpose: finding mobile needs/wants
 1. Inconvenience in mobile use 2. Private/ social interests, 3. mobile blogging

Name	SEX	Age	Job
○○○	M	28	Sales
○○○	M	26	Designer
○○○	F	23	emplogment
○○○	M	26	ITV engineer



Findings

- Needs easy ways for saving contents and safety data storage
- While moving, needs various application in sharing or backup contents.
- Mobile's complicated menu structure brings up most less satisfaction.
- Interests on usability and design

Figure 2. User Research

Once desk research was done, we conducted informal face to face interview and focus group discussion with paid participants under habitual process. Four people were participated and their average age is 26 ranging from 23 – 28. Three male and one female are participated. Two moderators went through FGI with open and ended questionnaire to find their needs dealing with mobile device as a personal recorder, blogs, and human network. The questionnaire includes needs toward mobile blogging, interests or habits to be record, and reasons that keeping blogs.

The results show three facets in designing mobile Internet service. The participants have required mobile application that enable to record and share everyday life. Furthermore, they want to get an mobile solution that see seamless contents

flow between mobile and Internet system. In addition they are used to leave more personal life moment such as family photos or memorable events. Regarding reasons to belonging blogs, they hope visitors including anonymous or family leave a message or comments on their new post once they keep blogs. Users’ needs/wants are more clearly understood by authors from the results of user research, which define main concept of the project. In next chapter, we are going to describe main concept, concept framework, and functions for the project.

Emerging Technology

<p>Web 2.0 Ajax, RSS, Platform</p>  <ul style="list-style-type: none"> • A trend in the use of open source technology and user-generated content that aims to facilitate collaboration, information sharing, and, most notably, collaboration among users. - Rich UI required : Ajax, RSS, Flash - 80% of actual user participation & sharing 	<p>Generation Contents</p>  <ul style="list-style-type: none"> • The phenomenon captures the an avalanche of consumer generated contents that is building on the web, adding tera peta bytes of new text, images, audio and video on an ongoing basis, which mash up the contents - Video clips + text / Audio clips + photos
<p>Easy Sharing & Connectivity</p>  <ul style="list-style-type: none"> • Providing a secure and easy way to view, store, and share their media with friends and family with seamless connectivity solution (i.e., WiFi, WiBro) - Spontaneous sharing - Automatic backups & real time synchronization 	<p>Mobile Mega Storage</p>  <ul style="list-style-type: none"> • Mobile devices expand to be a life recorder from simple fun or communication role. It has embedded storage or encompasses memory card for saving avalanche of life bits and bites in a natural manner. - HDD embedded mobile device - Increases of Mini SD, memory Stick Slot

Figure 3. Emerging Technology

The research on technology pulled out big four emerging trend: web 2.0, seamless connectivity, big storage of portable devices, and generating user contents (Figure 3). The authors believe that human life style gives birth to the emerging technology which allows to collect, create, and share their life moment. Everyone is easy to record and share their life given emerging environment. Mega storage of mobile device collects more than thousands of images or video clips, store and share through Internet (Web)

In conclusion, we defined problems for ensuring mobile user experience with respect to life caching service. First, it is necessary to develop a gadget that supports user nomadic life given paradigm shift. Second, it must provide features to easy record and share the life moment with few steps. Users has had suffers in recording and embellishing their life. If possible, novel user interface representing user everyday life is necessary. Third, the life caching service should encompass Internet and P.C. environment. For a long time, users have worked on P.C. environment which have them to work fluently. They must want to use it when embellishing their life moment.

2.2 Concept Development

Two approaches, in general, may apply to develop concept of project or service. One is bottom up approach. It is important to be generating as many ideas as possible and clustering into meaningful chunks with keywords, so it can be thought about. Making, then, a conceptual model of the data, but even looking at the data laid out in any sort of way should be enough for the designer to begin to draw design implication from it. The other is top down. It is to be setup an idea about what the product or service is going to be needed to appear once the research is done. It encourages to be beginning to suggest solutions to pursue. In the present study, authors chose the second methods when developing service concept. Because, it is more efficient way for designer to start digging

in and actually designing something. With a concept “life caching”, the authors went through brainstorming session. Starting with focusing on the subject at hand in the broadest possible sense is natural process. During one hour, did a word association game on what self esteem is or what life caching is, and have all the people in the room talk about their best experience in life. A total of 123 ideas are generated and re-categorized by three main goal (keywords): people relation, blogging/posting, feeding. Therefore, under life caching, three keywords for the mobile Internet service are decided. Figure 3 describes four core competency of service.

Even if it was initially beginning with mobile, the keywords call for additional element - P.C.- given mobile Internet. After all, the core competency of service arises in periods of focused brainstorming, which allow building conceptual framework and role of devices given ecosystem. The P.C. in the mobile solution works as “value added” tool and personal backup place in ecosystem, then the environment allows to be generating their contents and save all data obtained by mobile. The role of Internet (web) in ecosystem works as sharing and social network. Because, the Internet has been thought over participation and share, which leads to defining role of Internet in service elements.

Following to concept framework, service scenario was developed.

User sees his mobile device that automatically collects everyday behavior/activity in a timeline. User generates new contents given rich thematic templates once a mobile device is synchronized to P.C. and published and shared through Internet. The user checks the event on mobile or pc simultaneously once his friend left multimedia message on his Internet homepage.

Concept Framework



Figure 4. Conceptual Framework.

Figure 4 explains LifeDiary™’s service concept framework and ecosystem: life caching, blogging, feeding, and social network. Four core features are all applied to service elements, but a limitation due to the device or element nature still exists. For example, a mobile device has less favorable input method, thus the feature for blogging are weaker than that of P.C. device and Internet.

2.3 Detail Design

As mentioned earlier, the elements’ client has main role given LifeDiary™ ecosystem. Each of client (mobile, P.C., and Internet) was actually designed along with their role toward target. In current paper, we will demonstrate each visual

design being influenced by national characteristics. Compared to North America or Europe, current graphics style needs to imprint richer and tiny factors with color, font, icon, and layout. A lot of cultural studies reported the effects of nationality on design variance: the recommendable style in Europe & North America is much simple and lightweight characteristics.

2.3.1 Mobile: Create

Below UI design (Figure 5.1 & 5.2) visualizes mobile concept- life caching- which is automatically record life bits and bites and file up in a timeline. Furthermore, the mobile UI provides UGC tool that allows to make new contents since it works as creator in the ecosystem. The practical value of concept design organizes user’s activity given a single interface automatically and provides utility to end users. With the layout design, users are not necessary to search or browse menu functions. User can be returning calls, checking email, browsing photos and so on. In addition, like portal main page, it summarizes daily activity with today life diary. It makes meaningful information using my life history data dealing with contents and people. User browse today’s generating contents including text or multimedia and realize who are close to me obtained by communication log in today.

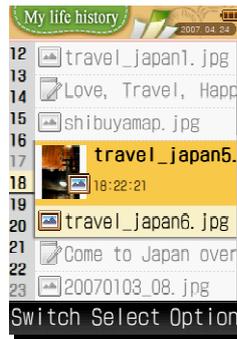


Figure 5.1 My Life History Figure 5.2 Today Life Diary

2.3.2 Web: Memory storage and Connecting People

The normal metaphor to web has been thought personal memory storage and sharing when looking at users’ usage behaviors: uploading, keeping, sharing their personal data (from text to multimedia). Those social results come with it ensures accessibility and controllability to people. Recent report shows that people want to keep and share their personal media rather than to more personal device-P.C. In fact, just a few years ago, many critics concerned about privacy issues or disclosure on personal information, however, alienated 80 percent of people are actively engaged and participated in web based social activity to present their presence to the public. Those findings are in accordance with insights from end user research. We, then, conceptualize it into “share your life” in LifeDiary™ ecosystem. To deliver the concept “share” in web, the feature, personal memory records, became starting point. It means how individual contents ranging from photos to text are actually designed works as social objects providing serendipity between anonymous people. We began to look at the web as personal perspective. The most objective metaphor – timeline- became trigger to visualize “personal memory storage” when designing web interface.



Figure 6.1 MyHome



Figure 6.2 MyBlog.

The left Interface, figure 6.1, shows MyHome which reorganizes data obtained from mobile. The information changes daily based on what user frequently has done. The right Interface, figure 6.2, shows MyBlog working as social object. If visitor left sticker or draw a line on Internet, then the behaviors applied to P.C. and mobile and user may check them at the same time.

2.3.3 PC: Personal Backup Storage

The P.C. embraces relatively favorable interface and interaction - large display, various input methods, and rich contents browsing and storage. Statistic show people, in average, has two desktop and one laptop computer and use personal contents management tools to embellish their images or video clips. In addition, features of those contents tools provide connectivity expanded to Internet site such as Flickr, and Youtube for share. Indeed, four samples participated in user research session have contents tools in their private computer at home or in office to uploading personal contents to social Internet site (i.e., the participants own facebook, and Cyworld). That environment encourages us to conceptualize it as personal backup storage. It assumed that seamless (easy and fast) contents browsing and powerful edit tool are core competency of P.C. application given avalanche of personal data. In current LifeDiary™'s ecosystem, then P.C. works as personal data backup storage, a gateway between mobile and Internet, and value added factory. Figure 7.1 and 7.2 are P.C. client's main (front) view and edit window creating new contents.



Figure 7.1 Front view – My History



Figure 7.2 Edit Window – My Diary

Figure 7.1 shows an interface right after the mobile sync to P.C. application. It automatically retrieves all information obtained by mobile and dispatches in a timeline. Like mobile, right of the Interface in figure 7.1 shows summary dealing with daily contents and people. An edit window is activate once clicking pencil which allow user to make new contents (Figure 7.2). Users are simply going to choose image, sound, video clips obtained from mobile to make one given thematic templates. In P.C., new interaction style is applied: drag and drop. Rather than folder style, it is easier to generate one.

3. MEASURE

With the LifeDiary™ working prototype, we executed usability evaluation to estimate the key objective the degree of acceptance and attractiveness of the distinct functions offered by LifeDiary™. In the present study, two items were evaluated: concept and three elements' practical functions. The Lifiediary™ embraces two distinguished aspects. One is three way synchronization and the other is create and manage contents to be shared. All subjects participated in the test are explained dealing with data transfer within an ecosystem. As it offers a complex suite of functions and a variety of interfaces to access said functions, the qualitative evaluation and comments for each of them are specially interesting. Three groups, 2 junior groups and 1 emergent group segmented by age were participated for a week. The subjects all have good knowledge of mobile and SNS (social network service) Internet service. Within a group, two user types were setup with different role. Active and passive: one is an user publishing original contents, invite other participants, inspires, and participates energetically in conversations. Passive is a user who participates through reading contents published by others, follows conversations, and might reply to some of them. Some of the juniors identified themselves as members of both profiles, which will affect their conversation about the application tested and the general concept of introducing the mobile to the online social networks. At the initial stage, a discussion with topics of Internet transfer between three service elements and online communities was being started. There are differences between two groups dealing with online communities. While juniors almost unanimously have an intense virtual life through virtual communities like facebook, however, emergent hardly develop this social aspect, they participate passively as forum readers, blog readers. This activity depends strongly on trends, especially when choosing which community to participate in. all of them, even the mergents, admit that it is a growing phenomenon that is continually affecting more users in more context. The participants all take part in one or more activities for recreational, professional or special purposes.

4. RESULTS

In the session of concept evaluation, almost all respondents do synchronization: although, in general, they are not very satisfied with the software solutions used for it, they do not think they need to look for another one either. For this reason, though the idea is not rejected, respondents do not seem interested in it. Regarding contents creation and management, even if it is not novel, it links highly topical elements that are not currently connected: social networks and mobile telephony. Therefore, it is an attractive concept, as the mobile is seen as a creator and publisher of contents. Also because it is perceived that the mobile itself would not be enough, since it must be adequately integrated into a PC environment, which is more popular, easier to use and more affordable. *“Until now, I only received mp3 and this kind of stuff in my mobile, but with this you can now send things to the Internet, that's nice”*. Some of the respondents, focus on the possibility of sending fresh contents while “ on the go” , Bringing this way freshness to their social activity, and consequently, being “prestigious”; For others, interest is focused on the possibility of consulting it at any moment or place, keeping the conversation open and being constantly updated, without having to wait to get to a PC.

In the session of practical evaluation, As a whole, participants state that the LifeDiaryTM solution is one of the best proposals they have ever tested: Usability: the usability is excellent as much in the mobile phone as in the PC, with only slight concessions to aesthetic concerns, that while make it less simple to use, they make the application look more attractive. Aesthetics: simple and functional, with great usability and usefulness, yet appropriate and attractive. Functionality: there aren't any features or additional options missing as everything is well thought out and resolved.

So, regarding its performance, LifeDiaryTM obtains a score of "excellent", with hardly any suggestions for improvement. Nevertheless, it still has few possibilities for success by itself if it is not connected with the social networks of well-known brands.

5. CONCLUSION

Through human centered process, the present paper presents vision of future mobile and concept proof scenarios. In the LifeDiaryTM service, each element (mobile, P.C. and Internet) in ecosystem has different role and collaborates together for personal life record and share experience. It is expanding to work as a personal life recorder and social gateway as well. Everyday life contents generated by mobile device are automatically rearranged in a timeline. Those data are transferred to the P.C. client for embellishing the moments and represent user identity. They are social objects connecting

people in a tribe. In conclusion, the services permits to create, manage and share personal contents and to access other users' contents from the mobile terminal.

6. BUSINESS LIMITATION

The concept-contents creation and management is highly appreciable to participants, however, it should be highlighted that initially this concept would tend to be interpreted as “ open” , that is, not linked to a standard social network. It implies only linked to a recently created network, limited to a minority manufacturer. So, juniors instantly link the interest potential of the concept to its specific application to the social network Cyworld (one of the most popular social network site), the most established one in this segment. Juniors also mentioned other social networks that now are not as fashionable now in Korea: Facebook, MySpace, Hi5 or MSN Spaces. Emergents mentioned Facebook or Flickr. Thus, the idea of interacting with their favorite social network through the mobile is really attractive.

Given more than high satisfaction from participants, despite all user benefits, the majority says that their interest could freeze up depending on the cost, since it is neither absolutely necessary nor urgent, but just a whim.

7. FUTHER STUDY

Current product is being evaluated dealing with user experience such as value, fun, and usefulness. Rather than testing simple usability, the test focuses on overall total experience. In current, we employed outside usability domain experts agency to test in Korea, Japan, and China. Furthermore, the mobile Internet service solution “LifeDiaryTM” is being under customization to European and U.S. market.

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