User Experience Optimization for Personal Services

Ming-Huei Chen, Convergence Services Laboratory, Chunghwa Telecom Labs Taoyuan, Taiwan, ROC Email:tlcarol@cht.com.tw

Shih-Ming Lin, Convergence Services Laboratory, Chunghwa Telecom Labs Taoyuan, Taiwan, ROC Email:jasver@cht.com.tw

Gong-You Chen, Convergence Services Laboratory, Chunghwa Telecom Labs Taoyuan, Taiwan, ROC Email:kongyu@cht.com.tw

Chun- Chi Chen, Convergence Services Laboratory, Chunghwa Telecom Labs Taoyuan, Taiwan, ROC Email:st5@cht.com.tw

Hung-Chi Chan, Convergence Services Laboratory, Chunghwa Telecom Labs Taoyuan, Taiwan, ROC Email:homejey@cht.com.tw

Abstract—With the trend of cloud computing, cloud services are aggressively launched. Along with the evolution of smart terminal and broadband technology, the demand about personal services built on cloud is aware. In 2011 April, Chunghwa Telecom (CHT) launch the Hami$^+$ Personal Cloud Service which is the leading product among the domestic industry about personal cloud service. Since the Hami$^+$ Personal Cloud service was published, a number of personal information management services and innovative services base on cloud was researched by CHT and published on Hami$^+$ Personal Cloud platform. To enhance the competitive ability of Hami$^+$ Personal Cloud Service, we continue following up the perception of the users about the Personal Cloud Service. We believe that to optimize the user experience will be directly and effectively to enhance customer satisfaction and product competitiveness. In this article, we will describe the planning and design processes that how the research team optimizes the user experiences about Hami$^+$ Personal Cloud service.

***Keywords*—Personal Service; UI/UX; Optimization**

I. INTRODUCTION

Along with the trend of cloud computing and smart terminal technology, Chunghwa Telecom (CHT) launches the Hami$^+$ Personal Cloud Service in April 2011[1]. In order to enhance customer satisfaction and product competitiveness, we decided to optimize the UI/UX of the Hami$^+$ Personal Cloud Services.

The term UI (User Interface) referred to as the user interface, which is the exposed portion of a product that user contact, and the term UX (User experience) referred to as the user experience, which is the processes that user interact with the product via the user interface. In addition, a visual style, system performance, services availability and information security are also part of the user experience.

If a product can be designed with the user experience as the core concept, then the product would meet customer's desire, and everyone would like to buy it. Such as the iPhone of Apple Corporation, this created a wonderful user experience, and resulted to a great sales achievement.

So we believe that through the optimization of UI / UX of our product that would promote users' satisfaction about our product, and finally will result in the promotion of product competitiveness.

II. PLAN FOR USER EXPERIENCE OPTIMIZATION

A. Information Collection Stage

To plan the optimization about UI/UX of Hami$^+$ Personal Cloud Services, we first plan to collect the information include users' perception, satisfaction and expectations about the existing services. We expected that the investigate report would give us the direction to improve the UI/UX of the services, also can be reference for product marketing strategy decision.

And then a market survey about personal cloud services was conducted by the Strategy Institute of CHT, and preceded with the following steps:

(1) Set the market research goals and plan
(2) Design tasks and questionnaires
(3) Select the target user
(4) Collecting the survey results, judge the validity
(5) Analyze the information that users' feedback

This market survey focused on the feedback of the opinion of users about the service satisfaction and their expectation. For that purpose 40,000 members were picked up from the service users, among the list 30,000 members were heavy users and 10,000 members were random picked up.

The market survey result can finally summarize into followings:

--User satisfaction percentage allocate between satisfied to acceptable.
--User interface should be more intuitive, easy operation.
--Some of the services should provide more intimate functions, such as Calendar service should provide event alert besides from the smart phone but an alert window from web. And Contact service should provide mechanism to cut the photo to proper size before upload.
--Guiding about the using of the service should be more detail.
--"Become a total solution personal portable portal" is the

most expectation among the respondent.

--Although this product got millions of members, but the portion of heavy users is not high.

B. *Plan Stage*

Based on the above conclusions of the market survey, we began to plan our UI/UX optimization and adjustment direction. Comprehensive analyses of UI/UX design of the current services indicate the following problems:

--First, the current design of the UI does not consider the trend of the screen specification. So the current render of the UI doesn't fit user's screen size when the user has a high specification and high resolution display. Figure 1 shows the effect.

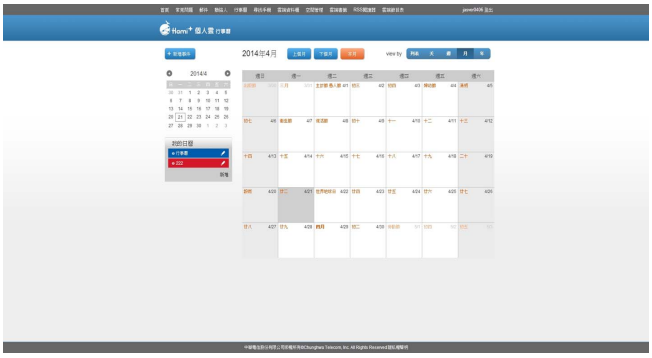

Fig. 1. Current render doesn't fit user's screen size

--Second, the service management functions on the left side of the display take too much portion of all. Therefore the render make user feel not clean and easy.

--Third, related personal cloud services was successively developed, inconsistent operation flow and visual style were presented. Such as Contact service and Calendar service, they got different visual style to add a new group or a new calendar. Some services got different operation flow to add on a new folder or channel.

--Forth, part of the operation is not enough intuition. For example, RSS Reader Service user must operate through several steps in order to find folder management function.

Since the conclusions above, the optimization for the UI/UX of Hami^{+} Personal Cloud Service mainly concern consider the design issues, include the service features, visual consistency, operation consistency about the service and across the services. And roughly summarize as follows:

--simplify the vision and consist the visual. Keep the existing principle simple, and add extra visual effects, like colorful elements. Keep each own style between services but also make the visual consistency.

--simplify the process and operation flow. Reduce steps to simplify the function operation, remove unnecessary buttons; reduce or avoid the pop-up window.

--operating consistency. Make consistent about the operation style between the services, let users easy in terms of the use of personal cloud services.

--make the render fit the display specification. Adjust the layout of the services; let users have the most spacious operating area.

-- Refinement of existing services

III. THE OPTIMIZATION

A. *Portal*

Portal is the entrance of Hami^{+} Personal Cloud Service; the optimization goes to the following ways:

--Join some colorful elements, increase lively tone to attract more young people and heavy users of internet service.

--Before user login or become a member, give users lively visuals and use active way to introduce the featured of personal cloud services.

--After user logins, portal shows service icons that was services authorized to the user.

--To improve the management of service, properties are defined for the services, like the apply conditions for apply services, apply URL, service URL, service status, exposing order and so on.

--In order to keep the consistency of the navigation bar on portal and various services. A special approach is designed, unified navigation information is provided by a single program on the central site that provides information like service name, URL, order and so on. Each service's navigation bar is constructed by the Web page of the bar and the navigation information get from the central site.

--For response to the market survey suggestion, adjusting FAQ's presentation into two separate windows, as left portion is questions and right portion is answer to the question focuses on. Another friendly design is that we add keyword search for the Q&A topic, which allows users to quickly find answers about service they concern.

After improvement, the web portal show as figure 2.

Fig. 2. The improvement of web portal

B. *Contact Service*

Contact service is one of the popular services among the personal services.

Optimization of Contact Service includes the following:

--Instead of the traditional design, Ajax asynchronous

processing technology let functions run background first and when finished display the result on the same web page. The new way improves the user waiting time.

--Use Block mask on background page to make the pop up window outstanding. It's a better way to interact with the user.

--Detect the loss of focus as confirm of the editing, also press the esc key as to cancel editing.

-- Picture cropping feature, when users upload the picture of contact, the marquee range can be adjust flexibly. Another feature is when user waits for uploading or cutting, a prompt message "Processing, please wait" are given.

--Contact home page provides two display mode for user to choose, list mode and card mode.

After the optimization, the home page of Contact Service show as figure 2.

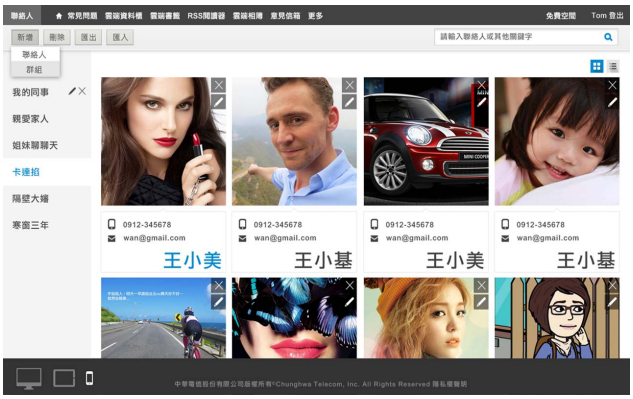

Fig. 2. The home page of Contact Service after optimization

C. *Calendar Service*

Calendar is the most convenient services among the personal services, it remind the user at the right time, allowing users to make travel planning and time management.

The UI/UX optimization about the calendar service includes:

--Change the service rendering to fulfill the screen to meet the wide-screen usage behavior.

--Develop keyword search function for user to search calendars on subject, location, note and other fields.

--Put the general function button and search bar on the top portion convenient for user to click and search.

--Redesign the service page architecture; replace all user interfaces by using Ajax asynchronous processing technology to reduce full page upload latency.

After the improvement of Calendar Service, the main page shown in Figure 7.

Also, part of the functional refinement was completed. Calendar export and import function is developed, also inter operation test is performed with famous calendar product like outlook, google, yahoo, etc.

After optimization, the home page of Calendar Service show as figure 3.

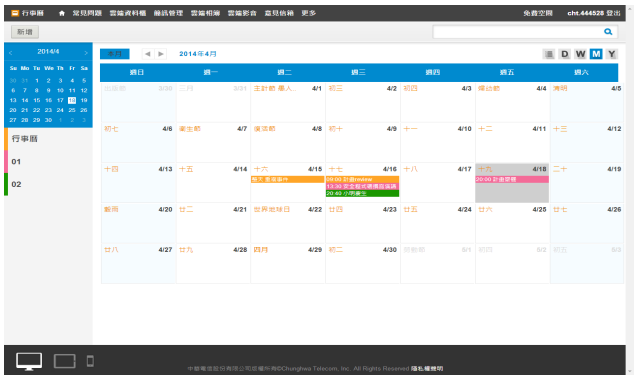

Fig. 3. The home page of Calendar Service after optimization

D. *Bookmark Service*

Bookmark Service allow users do not have restrictions about time, location, devices. Users can easily obtain and edit bookmarks also to browse the web by using the bookmark. A browser plug-in we developed for users to download and install, providing browser sync to the cloud, or cloud downloads to the browser.

Layout improvements included:

--Interface designed make folders and bookmarks coexist on the interface, instead of that folder portion on the left and bookmark on the right, enhance the user experience.

-Add list mode let users to quickly find the bookmark and sorting.

--The labels are designed by drop-down menu to filter the bookmarks by tag which user put on their bookmarks.

Functional surface improvements included:

--Add check box in list mode, so that users can select multiple bookmarks or folders in same time to delete.

--When list mode, edit and delete icons was hidden, when cursor moves to the bookmark then function icon surface, This make the UI more simple and intuitive.

--A hierarchical folder hyperlinks designed, so that users can quickly return to the top of the folder path.

--When editing is complete and user leaves the edit field, save the update are automatically done instead of user press submit button for confirm.

After optimization, the home page of Bookmark Service show as figure 4.

Fig. 4. The page of Bookmark Service after optimization

E. RSS Reader Service

When users enable RSS reader service, user can subscribe their favorite news and blogs from any computer or smart terminals with internet access, and share articles to related community (Facebook, Twitter, etc.).

The UI/UX optimization about RSS Reader include follows,

--RSS Reader home page presents list of all subscribed channel of the user by both article and pictures in the article, graphic rendering let UI more visual effects.

--New RSS reader browsing modes was added: card mode display both abstract and picture that present that article, summary mode which present small size picture and part of abstract, listing mode which present the article by listing the title and part of abstract for fast browsing.

--A new read flag mark way is designed, articles can be mark read by batch mode. This new function provide three batch types have note read the article: the time conditions (the day before, a week ago, and two weeks ago).

--When browsing as long as you have read the article, then text is display as gray.

--Expand the view area, presenting more articles and make articles easier to navigate.

--When browsing, a batch program is pulling the articles of feeds asynchronous. When new article arrivals then automatically display to the user.

--Paging is automatically extended when browsing, not need to click on any page button.

--Two-stage presentation of the article, when click on the hyper link of the article then pop-up a window to show the article picture and abstract. And when hyper link on the pop-up is hit again, then the pop-up is replaced by another independent window which presents the full content of the article.

After optimization, the home page of RSS Reader Service show as figure 3.

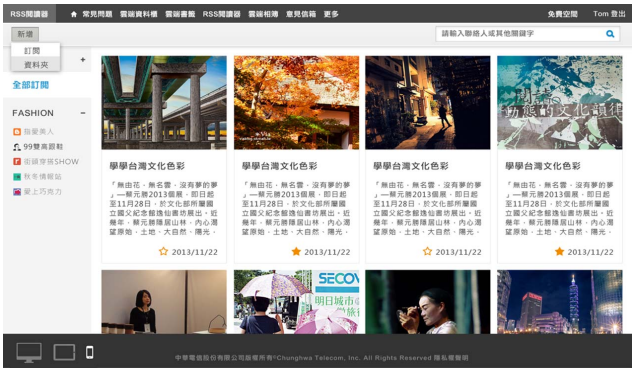

Fig. 5. The page of RSS Reader Service after optimization

F. Mobile Portal

Mobile Portal of Hami+ Personal Cloud Services is designed mainly to provide mobile phone, tablet and other smart end-use to use. When users came to the Hami+ Personal Cloud Service, system will automatically get the information of the user agent, and base on that to present mobile portal or web portal to user.

Improvements of Mobile Portal included:

--Make visual style consistent with the web portal of Hami+ Personal Cloud Service.

--Adopt the same authentication and authorization mechanisms with the web portal to manage the member of the personal cloud services. Make the system consistency and more maintainable.

--Current Mobile Portal only provide functions like FAQ, introduction of services and the function that leading user to apply to be a member. When Optimization starts, some service in different render to fit the mobile devices are born, like Bookmark, Calendar and RSS Reader. And these mobile page consist the same visual style with the web page, also the content is always synced.

IV. Conclusion

More and more consumer not only pursues a good product, but also they choose a product that can “meet their habits ". As researchers said, we must take off the old thinking that “Specifications is first all", we should provide users with a pleasant experience when meeting with the product.

As the principle we should follow: product design should be driven by UI /UX, because that is actually the part that users will meet and touch with the product. In other words, user experience is a test and benchmark about the product satisfaction with the product. So if we want to optimize a product then to optimize the user experience is the most important work to begin.

As the technology gets mature, and market trends always change, to pay sustained attention to user-oriented and continue planning to optimize the product should be regarded as guidelines of a service provider or business.

While the user experience optimization conducted, research team also research mechanism to measure the number of visitor, number of page hits, web traffic and so on. And the mechanism is going to use to evaluate the effect before and after the UI/UX optimization.

After the optimization for the UI and UX of Hami+ Personal Cloud Services, We also look forward not only the improving of user satisfaction, but also the costs reduction, revenue increase.

References

[1] Su-O Lin et al., “Implementation of Cloud Personal Information Management Service” in Chunghwa Telecom Laboratories Technical Journal, 2nd ed. vol. 42, 2012-4-15, pp. 381–396.