Addressing the Challenges of Multi-touchpoint Experience Design for Mobile Services

Context-awareness Might Work

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Abstract
The quality of user experience relies heavily on the consistence and integration of multiple touch points along the journey of purchasing and using mobile services. The challenges caused by fragmented and distributed touch points might be well tackled by providing context-awareness design (CAD). By analyzing the context of using mobile music services we come up with a framework of CAD. CAD can sense the differences of contexts behind multiple touch points, understand the meaning underneath, predict upcoming possible actions, give advice to users and offer customized and adaptive services.

Author Keywords
Multi-touchpoints; user experience; service design; context-awareness; adaptive design

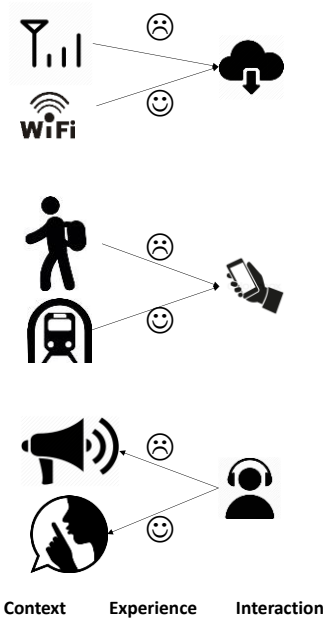

Figure 1: User experience of same mobile services differ in different contexts.

I: Downloading service might be paused when the touch point of data connection switches from Wifi to mobile data;

II: Reading electronic book has to stop when the touch point of reading environment switches from subway to street

III: Listening to music has to stop when the touch point of the surrounding switches from quiet to noisy environment

Introduction

Mobile and wearable devices have already penetrated into everyday lives of common people. Nowadays, mobile life is indispensable for many people and much of the services are delivered in mobile platforms to meet the trend. Despite the popularity of mobile services, users are still suffering from the inconveniences caused by multiple, inconsistent and fragmented touch points in the process of using mobile services.

Traditionally, resources in mobile services are employed to design the interactions between humans and computers with discrete and independent touch points even those touch points are created by one application or web site. One of the challenges brought by that kind of design is inconsistent and disjoint user experience in the multi-touchpoint [3].

The challenges are closely related to the context in which touch points happen. In the four categories of touch points (products, interaction, message and setting), context (setting) of usage can be easily neglected in designing and orchestrating user experience since the relevant pain points might be considered as the negative effect of other three types of touch points instead of the context[6].

For example, the mobile services that users' deploy along the journey of commuting might include reading book, watching video, social networking, listening to music, photographing, etc.

The touch points differ both in terms of types of services, the corresponding user experience and ways of interacting with service providers.

Multi-touchpoints in several point of views

From the perspective of user experience, the multi-points exist in delivering different quality of user experience in various contexts of using mobile phone. Walking is more suitable for users to listen to music than taking subway because the train is noisy. On the other hand, taking subway is more suitable for users to read book on mobile devices than walking because standing or sitting in a subway has a more stable position. Users have to switch between various services to adapt to the context.

From the perspective of service design, the multi-touch points exist in different phases of interacting with services that include searching for application, downloading application, downloading music, creating playlist, listening to music, adjusting volume, switching songs, pausing songs, etc. The user has to stop using the online music service when there is no cellular data or WiFi. Here the two touch points (the content of music and connection to music) are provided by different suppliers and the journey of using the music service is disrupted because the transfer from one point to the other fails. In another case, a user is not allowed to listen to one online song when he/she travels to another country because intellectual property for the specific song is not available in that country.

From the perspective of marketing and purchase, users might use multiple sources of information (Omni channels) to help make purchase decisions – comments and reviews in online store, opinions of others, customer service agents, sales in store, physical examination of goods by themselves and brand images in mind[1,8]. "*A touchpoint is any time a potential customer or customer comes in contact with your*

brand–before, during, or after they purchase something from you."[5]

Decision can be consolidated by consistent omni-channels "*where customers experience the brand as a single whole, and not a set of standalone disconnected channels*"[7]. On the other hand, the purchase experience and decision can be harmed with inconsistent information across different omni-channels.

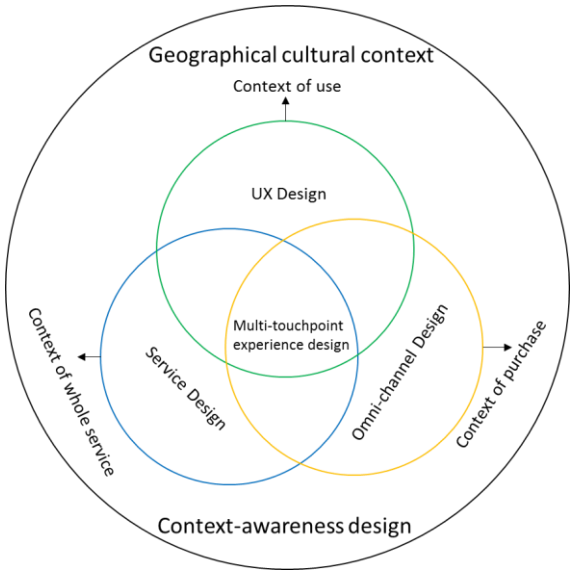

Figure 2: Context-awareness design and multi-touchpoint experience design

Besides, same interactions might differ in different contexts. Listening to music in a quiet car of subway is to enjoy the music and that in a noisy car of subway is to cover up the noise. The consequence is that in a quiet car the volume is lower than that in a noisy car. These kind of differences might be neglected without consideration of the context of using mobile services.

The geographical cultural context shapes all aspects of the three circles in Figure 2. For example, using a same service app to check flight times in a European and a Chinese airport provides different user experience (may work more smoothly in one of the contexts), bring a different service experience (may be part of different service blueprints), and have a different fit with the omni-channel design (be more or less consistent with other channels in the local context).

Designs aiming at providing high quality of mobile user experience need tackle the challenge caused by multiple, fragmented, inconsistent and distributed touch points. Touch points across various phases of services and omni-channels should be seamlessly integrated, consistent and orchestrating. To that end, context-awareness design can help break the limitations of focusing on just the disconnected and inconsistent channels and devices in service and marketing, understand the context of purchasing and using mobile services and create personalized and adaptive services.

The technological advances in hardware and software of mobile context awareness make current mobile services capable of both sensing and reacting to contextual changes along the journey of mobile service with multi-touchpoints [2,9]. Consequently, it's technologically feasible to design and implement consistent, intelligent, personal and user friendly mobile services by borrowing ideas from mobile context awareness to solve the

inconsistent and disjoint issues of multi-touchpoint [4,5].

Methods

The following steps can be followed to

Identifying context of touch points

Identifying context of touch points is the first step toward creating context-awareness user experience design. In this step, try to discover the reasons and motivations driving user to interact with the objects at all touch points in services.

Categorizing and modeling

Drawing a big picture of the contexts by categorizing and modeling the contexts by the object, way of interaction and roles in interaction, etc.

Integrating and orchestrating contexts

The touch points along the journey of services should be integrated and orchestrated in their interaction with users so that users can have consistent and consecutive experience in natural ways.

Predicting and advising

Making prediction of possible actions and giving customized advice to users for the following up operations. For example, asking a user if he/she want to continue to download the videos when the mobile device is connected to WIFI

Adapting to the contexts smartly

Adapting the interaction of mobile services to the context in smart ways. For example, lowering volume of media in quiet environment or muting mobile phone during the meeting time in the calendar.

Conclusion

In this paper we propose that context-awareness design might help tackle the challenge of multi-touchpoint experience design. A conceptual model and methods of context-awareness design are illustrated based on analysis the challenges of multi-touchpoint experience. Context-awareness design might well integrate service design, UX design and omni-channel design by identifying, understanding and adapting to the corresponding contexts.

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