

# Context as a System, Product as a Component, and the Relationship as Experience

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**Abstract.** Currently, User Experience Design (UXD) is spotlighted as one of the most topical areas in design. It is an umbrella term that explains all aspects of a user's experience with a given context, including the interface, graphic design, industrial design, and interaction (Merholz P. , 2007). Particularly, the notion of UXD is rooted in human factors and ergonomics that focus on physical, cognitive and emotional interaction between human users, machines and a contextual environment. In the industrial design field, the idea of UXD is not a new but an ancient concept that has been discussed in different terms such as ergonomics, anthropometrics, and affordance, etc., and whose main focus is a positive and rich experience. The current development of SNS (Social Networking Services) and smartphone technology, however, has created possibilities for new types of user experience design. Sander (Sanders, 2002) mentions this possibility as new design space where "designers will transform from being designers of "stuff" (e.g., products, communication pieces, etc.) to being the builders of scaffolds for experiencing.", and where industrial designers will now confront different challenges to discover and develop new types of products with different interface designs for novel user experience. For example, tablet computers like the Apple iPad already have changed the activity of computing from a static environment to almost everywhere. Based on the theoretical framework that "a context as a system, a product as a component, and the relationship between them as an experience", we propose three main research questions. These questions are 1) how a current professional UX designer in practice has redefined UX design themselves, 2) what specific actions are performed and 3) what supports they provide for their client. Through careful in-depth interviews with seven professional UX designers in experience-centric design firms, including IDEO and Adaptive Path etc., in US and Canada, we propose several critical notions and foundational references for UX designers.

**Keywords:** User Experience Design (UXD), total experience, empathy, systemic thinking.

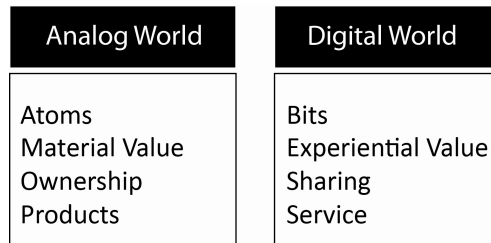
## 1 Background

Human experience is innately a personal activity and thereby evokes different meanings for different people (Sanders, 2001). It is usually caused by our physical, cognitive and emotional interaction with the world surrounding us. John Dewy

(Dewey, 1934) insisted that our experience is governed by a series of historical events during our life. He states that “our interpretation of the present world is influenced by our past experience while our future goals will be shaped by the interpretation of our current experience” (Dewey, 1934). This statement shows that one’s desirable experience in the future could be forecasted by understanding his or her past experience as well as current behaviors.

Some have identified the principles of experience from business and technological perspectives (Joseph and Gilmore, 1998; Zomerdijk and Voss., 2010; Stuart, 2006) and others in design fields have looked healthier and richer applications for this topic. In industrial design fields in particular, some factors or components that contribute to a positive experience for end users have been studied. For example, the fields of anthropometrics and ergonomics have focused on positive physical experiences such as comfort (Vink, 2005) while cognitive human factors and Kansai engineering have stressed cognitive and emotional experiences such as pleasure (Jordan, 2000).

Basically, the aforementioned studies have focused on our physical experience locked in an analog world. The basic unit in the analog world is the atoms. It is a fundamental component needed to create material value. The material value, then, affects the ownership of something which is of crucial importance in an analog world. On the other hand, secondary space that we have is the digital world. Instead of atoms, the digital world consists of “bits” which have only two numeric values, either 0 or 1. Moreover, bits allow for easy transforming, replicating and dispersing information which augment the experiential value rather than that of ownership. In other words, sharing experience in the digital world is much easier and simpler than that in the analog world. Furthermore, the experiential value leads to the notion, “sharing”. Instead of owning something, shared experience with others is a crucial matter in digital world and this is also related to the notion of “service”.



**Fig. 1.** The foundational difference between a digital world and an analog world

## 2 Examples of New User Experience Design (UXD)

Based on an understanding of the theoretical framework of these two different worlds, some key concerns for the future UX designers are discussed in this section. Firstly, the value of experience will be more emphasized than that of ownership. One example of this notion would be the newly made title, “rentrepreneur” (Baedeker, 2011). This is a person who rent his or her personal belongings that he or she does not

often use. They rent out items such as cars, couches, costumes, and even their dog! Some elderly people who want companionship with a pet but who cannot handle the responsibility of caring for their own pet may wish to rent someone's dog when they want companionship.

In a similar vein, Airbnb, an online community based company, is doing their business to connect travelers who are looking for difference experience and economic accommodation service rather than staying in a hotel room to an owner of room or house who want to share a room in their place or entire house while he or she goes away. Currently, this company founded in 2008 has more than 250,000 lists of places from a private room to an igloo in 30,000 cities and 192 countries (Hempel, 2011). The basic principles of the two cases, the "rentpreneur" and "Airbnb", are all about sharing experience.



**Fig. 2.** The image of the rentpreneur (<http://www.thedailybeast.com/newsweek/2011/11/20/how-to-make-money-when-economy-is-failing.html>) and the airbnb's company logo ([www.airbnb.com](http://www.airbnb.com))

Rather than emphasizing product design, the secondary aspect that is explored is that of service design. In this situation, a good service refers to the benefits of a product and its channel through which users could engage with the service. For example, Starbucks is a place that provides better service and aims to improve the entire customer experience of enjoying a cup of coffee. The numbers of touchpoints<sup>1</sup> in the place have been carefully designed to increase customer's total experience. For example, the wooden tables and the leather couches provide comfort and a relaxed experience. In addition, other touchpoints such as the incandescent lightings, Wi-Fi internet service, relaxed background music, and coffee aroma will accelerates a customer's positive experience in being there.

In terms of the concept of a total experience, another good example is the airport lounge service that Porter airlines provides. Porter is a regional airline company in Canada. By providing a better airport lounge service, Porter has increased a customer's entire flight experience. In general, an airport lounge service is only for business or first class passengers. However, Porter provides a similar lounge service for everyone who booked their flight. Similar to other airport lounges for business or

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<sup>1</sup> Touchpoints occur whenever a customer or user come into contact with a part of an organization, whether it be a product, interface, customer service call, in-store interaction, or point of purchase display. They occur across several channels and at multiple points in time (Fortier, 2012).



**Fig. 3.** Images of Porter airline lounge in Ottawa international airport, ON, Canada

first class ticket holders, Porter provides an Internet café service, coffees, beverages, newspapers and snacks for free to all their passengers. Furthermore, they put home-like-furniture and undistructive table lamps to increase a cozy and relaxed experience for their customers.

Lastly, new types of collaboration at work will be introduced. For example, Local Motors, a U.S based the first car company that co-create vehicles with its virtual multidisciplinary community of diverse groups of experts such as car designers, fabricators, engineers, enthusiasts and customers from around the world (Anderson, 2010). Moreover, this company provides an ‘engaging experience’ for their customers so that they learn about cars and customize the car they would like to have. Through these new types of collaboration, this 40-employee company has received around 44,000 car designs a year, shared knowledge and insights. In fact, with 3,600 innovators, the company developed a car five times faster than the traditional way to make a car, and used 100 times less capital (Anderson, 2010).



**Fig. 4.** 2009 Rally Fighter, designed by Sangho Kim, with the Local Motors Community ([http://www.cartype.com/pages/4078/local\\_motors\\_rally\\_fighter\\_2009](http://www.cartype.com/pages/4078/local_motors_rally_fighter_2009))

Based on the understanding of the new trend described above and the flux of current technological developments in SNS (social networking service), powerful broadband, cloud sourcing, hi-speed Internet and smartphone, etc., more diverse

services and experience will be introduced and available through new products or applications in near future. Moreover, the new product or application will reduce the distance between the digital and the analog world due to the demand of flexible accessibility from the analog to the digital world or vice versa.

For the purpose of meeting the requirements for the new trend, some have proposed ways to achieve it by evoking the user's dreams through indirect investigation, games (Shedroff, 2009) and the use of empathic research to understand complexities of the user's life (Merholz et al., 2008). In a similar vein, Sanders (2001) suggests participatory design is a way to engage users in the design process so that designers could discover a user's feeling, memories, experience, and dreams for their future offerings. Beyond the academic perspective to see the phenomenon, the next chapter attempts to investigate current approach for UXD in practice.

### 3 Method

As the popularity of UXD grows and evolves, the population of UX designers in the field has been rapidly escalating. For this reason, this study has employed an in-depth interview as an empirical investigation to understand how industry leaders on this topic illuminate this new field of inquiry. Through careful in-depth interviews with seven experience-centric design and consulting firms, this study attempt to discover areas such as; 1) how current professional UX designers in practice defines UX design by themselves, 2) what specific approach they do, and 3) what supports they provide for their client.

For the purpose of analysis, the narrative data from the interviews were transcribed and analyzed based on Auerbach and Silverstein's (Auerbach, Carl F., and Louise B. Silverstein., 2003) methodology, where relevant text is highlighted and grouped into repeating ideas. Then, the repeating ideas are categorized into patterns that are related to the research questions. In addition, a careful screening procedure to choose appropriate interviewees has been made by reviewing whether their core business offering is user experience design or not.

In order to understand the most comprehensive components of experience design, the selected interviewee had a minimum of five years of professional experience in this field. Also, the list of companies was primarily identified based on public reputation and expert opinions in order to assure that they were appropriate design firms. Furthermore, companies who had a global presence, were active in social media and contributed regularly to reputable publications were pursued (Fortier, 2012).

#### 3.1 Interviews

**Setting.** The in-depth interviews were conducted remotely via telephone as well as on-site, in-depth interviews. The three on-site interviews took place in casual environments at the IDEO office in Palo Alto, California, including the lunchroom and a public meeting room. As the telephone interviews were conducted remotely,

some interviews were conducted during regular working hours, where participants were reached on their office phones, while others preferred to be contacted at home or on a mobile phone. Participants were located in either Canada or the United States, depending on their company headquarters (Fortier, 2012).

**Measurement Instruments.** The interviews were conducted using an interview protocol. Interview questions moved from the general to the specific in order to build rapport with the participant and avoid establishing a set, where the participant would be inclined to provide predisposed answers (Sommer, 1997). A list of ten to fifteen questions was asked based on the duration and direction of the interview. Consequently, at times some questions were omitted, while others were added ad-hoc during the course of the interview to delve deeper into a particular topic of interest when relevant. Furthermore, questions were asked in an open-ended format and focused mainly on the meaning of experience design, the research and design methods used, and perspectives of the respective firms. Probes were also used to further explain an abstract concept or obtain supplementary information on a certain question (Fortier, 2012).

**Data Collection.** Interviews began by providing participants with a general overview of the study, helping to set the context for obtaining information relevant to the research problem. The interviewer also requested each participant's oral consent in identifying the design firm's company name in the reported findings. At which point, participants were informed that their responses would not be attributed to them in any way and they would remain anonymous in the findings and thesis. In order to ensure accuracy of data collection, participants were also asked for permission to audio record the interview session. As the phone interviews were held with participants who live outside of Canada (e.g. United States), oral consent versus written consent was more appropriate. Each interview lasted between 30 and 45 minutes.

**Data Analysis.** Due to the semi-structured and open-ended question format, data analysis involved a coding process to categorize and label the data into meaningful chunks. The goal was to draw out major themes or relationships in the hopes of developing a set of design patterns. Firstly, from the raw transcript, relevant text was selected and transferred to a separate document. Relevant text is text that relates in anyway to the research questions and theoretical framework (Auerbach and Silverstein., 2003). Subsequently, the relevant text was scanned for repeating ideas which are similar ideas expressed by two or more research participants. Repeating ideas were first identified in the separate transcripts and then combined with the repeating ideas from all other transcripts. After all, a master list of repeating ideas was created, where all repeating ideas assimilated from the individual interview transcripts were combined. At this stage, ideas were either amalgamated, re-grouped, or discarded as orphan text. Then, the repeating ideas grouped into themes. The process was designed to be transparent and systematic in order to ensure the validity of the results (Auerbach and Silverstein., 2003). In sum, five patterns emerged and are discussed in detail in the following chapter (Fortier, 2012).

## 4 Result

The seven interviews on experience-centric design firms provided a wealth of knowledge of UXD in practice in response to the three research questions; 1) how do current UX designers in practice defines UX design by themselves?, 2) what are specific actions they perform?, and 3) what types of supports they provide for their client?.

### 4.1 Holistic and Systemic Perspectives

In regards to the definition of UXD for the first question, most participants had similar opinions. When asked to describe the meaning of experience design almost all participants responded that it involves a consideration, beyond one interaction, to how all the interactions fit together within a broader experience. In describing this concept one participant stated,

*“The experience of opening the packaging also contributes to the experience that you have with the object itself. So it’s really a case of not just concentrating on one particular instance of interaction but going beyond that and seeing how these interactions get together and form a whole experience.”*

Many have emphasized the holistic perspective as the most important factor for experience design. It involves every single interaction we have with the whole chain of events that lead us to experience the offerings. So, a holistic perspective is about going beyond one particular instance of interaction with a product and seeing how multiple interactions form a whole experience. For example, Starbucks pays great attention to the holistic perspective from designing the café from the moment a consumer walks in and leaves the place. People like going there not only to drink a coffee but to have an entire experience. People tend to consider Starbucks café as a warm, cozy, and safe place that evoke the sort of legendary coffee shop of Europe. In order to have a holistic perspective, it is necessary for UX designers to have a systematical viewpoint to see the given design context. Like a system consists of multiple components and their relationship to make the system running, the holistic perspectives allow designers to see products as a components, the given design context as a system, and the interactions among the components, the system and end users as experience. For example, if a hiking trail is a given design context, a bench is one of products in the context. From the systemic perspective, the hiking trail is a system and the bench is one of components in the system. In this sense, the design of a bench does not have to be traditional bench shape but it can be anything (e.g. a log or a stone) as long as it supports the system. Also, participants in the interview stressed that a holistic perspective is something to be carried through all phases and approaches of designing for experience. This also requires a holistic picture of everyone involved, not only the end user. As such it must take into account the whole person; appreciating the user as a complex, multi-faceted human being.

## 4.2 Design Research and Design Synthesis

It was clearly shown that UX designers focused heavily on both design research and synthesis. In the research, first, they try to learn about their clients as well as end users in terms of their culture and business. Immersive in-depth research techniques, such as ethnography and observation are utilized to understand user's perspective and emotional latent needs such as pains, needs, and desires. By employing qualitative and quantitative research methods, they tried to make an emotional connection with the users as well as clients. Once they have made an emotional connection, then, almost of all project members including clients wanted to develop empathy for users through team involvement in all design phases and soliciting user feedback through high and low fidelity concept testing and iterative prototyping throughout. Often designers represent the empathy through a narrative story explaining how an offering fits into one's life and a particular context in which they will be using in. Through the series of those activities, designers try to find opportunity and change viewpoint from usability or functionality to desirability.

## 4.3 Harmonious Relationship

As we mentioned briefly above, user experience originates from every single touchpoints in the given context and their harmonious relationship. Almost all companies we interviewed advocated that their capabilities are to deliver consistent touchpoints to increase the impact of experience centric product, service and system design in their organization. Explicitly, when asked the reasoning behind their success one firm responded,

“If you are looking for experience design you should come to us, because we are looking at what's happening, what technologies you have, what the brand is, taking the pulse of the people that are out there. Looking at the pulse of the people who are buying watches, looking at materials, looking at finishes, looking at the packaging, looking at the brand promise that would show up in advertising. Looking at the point of sales display. Integrating across all those touchpoints, that's where we get our strength.”

In order to make better harmonious relationship among the touchpoints, integrating the experience consistently across all touchpoints and resending a coherent brand story tied seamlessly across all touchpoints will be crucial factor. Specifically, the notion of consistency in this case was extended to a company's brand identity, philosophy or a concept of particular project. Designers try to make sure that they are consistently showcasing similar concepts and images of what they offer. For example, companies like Apple and Alessi have done a very good job at consistently communicating their design concept.

## 5 Discussion

This study has attempted to reveal some important concerns to conduct better user experience design. It insists that designers must shift their perspective from the



isolated product or service towards a holistic perspective to interconnect products, context and users throughout the design approach. Due to the current rapid technical development allowing the gap between an analog world and a digital world to be reduced, the area of experience design would be a new market and a competitive battleground. This phenomenon could aid in redirecting organizational focus and help companies to recognize that every touchpoint impacts the greater experience. In addition, the shift in the existing client-designer paradigm towards collaborative co-creating design ascertains that designers will play a greater role as facilitator, communicator and enabler for their clients.

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