

Relationship Models of Social Experience Design and User Experience Design

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Abstract—User experience design brought with it a new framework for computer and human interaction in the 1990's. It focused on the total user experience, and not the case-by-case alternative user interfaces. The natural extension of this concept with emerging social services leads to social experience design. There are multiple common assumptions about the relationship between social experience and user experience. The author performs an exploratory comparison of these relationship assumptions in order to clarify the positioning of social experience design.

Keywords—social experience; relationship models; user experience; social services; social factors

I. INTRODUCTION

The term “user experience” was coined in order to focus on user-centered design with coherent and consistent user experiences in human-machine interactions. “User experience” has brought about a departure from the functional aspect of user interaction. Since the Internet has facilitated social networking services, it is important to develop a socially-invoked user experience. Social experience has multiple unique characteristics that are not observed in user experience.

The term “social” is multi-faceted, and many researchers use it with different viewpoints in mind. It can mean interpersonal, ceremonial, informal, public, non-profit, or humanity on a massive-scale. It involves emotion, trust, ties, emotion, and norms.

In this paper, the author assumes the social experience to be identical to multi-user experience. Multi-user experience is an extension of single-user experience in the context of multi-user interactions.

Multi-user experience is complicated due to the asynchronous interactions of autonomous users with different roles, skills, values, and expectations. At the same time, multi-user experience is also fundamental for human interaction design, because it is rather unnatural for a human being to be completely isolated from the social contexts he/she belongs to.

In order to pursue user-centered design, social contexts must play an essential part of design.

Extending user experience design is not as straightforward as we expected. The author has come to recognize the complex characteristics of single-user experience design and multi-user

experience design. Social experience design methodologies depend on the assumptions that underlie the relationship between user experience and social experience; however, this is still a young field of research.

The author discusses the underlying relationship assumptions in order to explore social experience design.

II. BACKGROUND

A. Purpose of Research

The aim of this research is to identify differences between social experience design and user experience design.

B. Related Works

Advances in computer technology have enabled design to focus on users with its emerging rich-media capabilities. Norman presented the concept of user-centered system design [1]. He approached usability from the viewpoint of cognitive psychology [2].

The term User Experience Design was coined by Donald Norman. The term has been influencing user interaction design for two decades with its departure from the computer-human interface toward high-level interaction design. He also discussed emotional design and mentioned that emotion is an essential part of life, affecting how we feel, how we behave, and how we think [3].

Buxton was another visionary in user experience design in the 1990's. He discussed the design innovation from the viewpoint of user experience design [4].

In the early literature, social systems represented organizational systems. An organization is an open system [5]. Grudin presented eight challenges to groupware that stem from social dynamics [6]. The social aspects of information technology research were organization-focused organizational ones.

Social user experience is attracting attentions of research. The term “social” can address multiple facets of human activities: Interpersonal, public, shared, ceremonial, non-profit, and national/international. Väänänen-Vainio-Mattila et al. discussed the main drivers of social UX include self-expression, reciprocity, learning and curiosity [7]. Vermeeren et al. discussed UX evaluation methodologies through literature review and other approaches. One of their findings was the need for methods for developing social and collaborative UX evaluation

[8]. Tuch et al. discussed narratives in UX and showed that positive narratives predominantly concern social aspects such as family and friends [9].

The author used the metaphor of user experience design in social contexts and proposed the concept of social experience design [10]. He examined social experience design using evolution-path-based analysis [11].

Social experience is dynamic, vague, tacit, and complicated. How to position social experience within a holistic view of user experience is a key research question. The originality of this paper lies in its identification of differences between social experience design and user experience design in order to highlight the research scope of social experience design.

III. SOCIAL EXPERIENCE DESIGN AND USER EXPERIENCE DESIGN

A. Definitions

The fundamental research question for social experience design is “What is social experience design?” And, the best approach to this question is “What is the relationship between social experience design and user experience design?” The author attempts to explore this second question in this paper.

The following acronyms are used in this paper:

- UX: User Experience
- UXD: User Experience Design
- SX: Social Experience
- SXD: Social Experience Design

UX involves the concept of creating a new architecture or interaction model that will impact user perception of a value experience. UXD involves a design that focuses UX in order to elicit a positive attitude or response toward a service/product. One of major principles of UXD is user-centered design.

User experience design is the discipline of creating a useful and usable service or product that meets the needs of a user.

B. Why do we bother this relationship

UX has its own 20-year history of research and practice. The pursuit of SX is still in its early stages, however, let’s assume some UX with multi-user interaction. As social interaction increases, there will be some theories, frameworks, and the best practices that accumulate. A straight-forward way of using UX and SX is to use both of them from time to time picking either on when appropriate. If it serves the purpose of experience design that involves a social context, then we need a reason to bother with the relationship.

The author has come to recognize that such a straight-forward design can get us into trouble in some cases, as depicted in Table I.

UX provides a high-level usability and satisfaction that deal with the needs of a user beyond each instance of human-machine interaction. From an analogy to UX, SX serves as a collective usability and satisfaction that deal with the collective needs of users as well as the diverse needs of each user. This collective benefit needs to address the diversity and heterogeneity of users, and different weights in terms of benefits and costs over a long time dimension in the case of SX.

TABLE I
CASES WHERE A STRAIGHT-FORWARD DESIGN WILL ENCOUNTER TROUBLE

Case	Description
Bound case	SX and UX are tightly bound when the task to be performed is socially-oriented, or when participating users have strong bonds.
Happiness hacking case	User happiness is strongly impacted by social well-being, therefore, recognition, sharing, and supporting can provide a significant source of user satisfaction.
Operation-oriented tuning case	It is difficult to capture user satisfaction as a group. Data mining is used to capture such operation-oriented know-how for the purpose of tuning a service. In this case, arbitrary application of UX and SX makes an operation-based feedback a challenge.
Invisible tie to individual performance	Individual performance can be impacted by social recognition, challenges, competition, and pursuit as a group.
Time dimensional case	SX requires trust and social ties over a span of time. Even so, UX also deals with time-dimensional factor for improved usability and satisfaction, the degree of longer time-dimensional factors is higher in the case of SX. These time dimensional factors can conflict when UX deals with short-span time dimensional factors.
No SX representative case	There is no single representative target of SX target in many SX design cases in terms of the usability or need dimensions. This leads to difficulty in balancing between UX and SX.

TABLE II
POSSIBLE CONFLICTS BETWEEN UX AND SX

Item	Description
Social fatigue	Too many social bonds and too much social-interaction performed as duty causes stress for humans. For example, the social network service Facebook is very popular in U.S.A. There are an increasing number of Facebook users who claim social fatigue. They feel stressed, but find difficult to quit using the service.
Asymmetry of UX in SX	How each UX of each user is impacted by each SX context differs from person to person.
Imbalance between social goals and individual goals	There are cases where social goals and individual goals do not match. For example, winning a championship match and challenging a personal record may conflict in team sports such as baseball.
Imbalance stress	The way a person fits current social context may differ from person to person. This variety and diversity of fitness provide different impacts on the UX of each user even with a single social context.

C. Possible Conflicts between UX and SX

The relationship between UX and SX matters when there are possible conflicts between UX and SX. Examples are depicted in Table II.

IV. RELATIONSHIP MODELS

As soon as we come to consider how we can extend UX toward SX, we have to examine multiple assumptions that provide completely different viewpoints of SX.

For example, we can think of three different assumptions about the relationships between UX and SX, as depicted in Table III.

One assumption is that SX is a socially-invoked UX. With this assumption, SXD is the design of a socially-invoked UX. From this viewpoint, SX is a subset of UX, as depicted in Fig. 1.

TABLE III
DIFFERENT ASSUMPTIONS ABOUT RELATIONSHIP BETWEEN UX AND SX

Relationship	Description
UX is a higher construct to manage SX (UX-dominance model)	UX is a higher construct for managing other components including SX. UX provides a holistic view including goals and evaluation metrics. SX consists of the building blocks for UX.
SX is a higher construct to manage UX (SX-dominance model)	SX is a higher construct for managing other components including UX. UX is a special single-user case of SX.
UX and SX are different viewpoints of design (disjoint model)	UX and SX have some common goals, evaluation methods, and design patterns. Each has different areas for which merits of each approach should be considered separately.
UX and SX are overlapping in design (overlapping model)	UX and SX have some common goals, evaluation methods, and design patterns. Each has different areas for which merits of each approach should be considered separately.

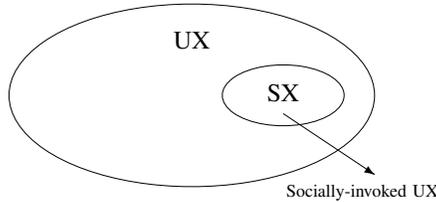


Fig. 1. Inclusive relationship between UX and SX

The pros and cons of this approach are depicted in Table IV.

From this comparison, the UX covering SX approach has benefits in applications where UX design plays the main role with the addition of isolated SX. Applications for leveraging user engagement in social contexts fit this category. Many high-engagement games and education applications are included in this category. This approach has weak points in applications where social ties are important. An example of such a criterion is a team-work-education service.

Another approach is one where SX includes UX, as depicted in Fig. 2.

This is an SX-dominant approach, which can be applied to the cases where social goals have a higher priority than each member's goals. In this framework, collective goals will subsume individual goals.

The pros and cons of this approach are depicted in Table

TABLE IV
PROS AND CONS OF THE UX COVERING SX APPROACH

Pros	UX provides a holistic view of user satisfaction. User satisfaction in the context of UX is more measurable than social experience in the context of SX. UX has a two-decades-long history of design patterns and best practices that can be used for designing SX.
Cons	Human beings are creatures of social existence. Social cognition, pressure, and competition provide different and contradicting impacts and satisfaction to design patterns that were designed for a single user.

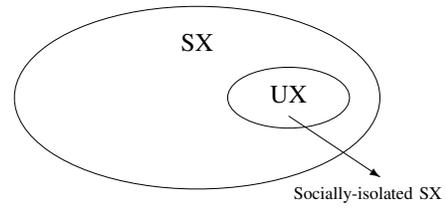


Fig. 2. Another inclusive relationship between UX and SX

TABLE V
PROS AND CONS OF THE SX COVERING UX APPROACH

Pros	Social influence has a deep impact on user behavior and satisfaction. Many of today's tasks involve social contexts and are bound to social services. As the stay time in social services increases, it is straightforward to focus on more social contexts rather than personal contexts.
Cons	Social satisfaction and conflicts are more difficult to measure and track. Much social cognition is tacit and difficult to formalize into a human-computer interaction. Sometimes, the social influence on behaviors can be misleading and excessive such as online game addicts.

V.

From this observation, this approach fits the collective-goal-dominated domain, team battle applications where individual gains depend on team results only. Applications that have no individual-closure are included in this category. An example is a brainstorming system. Some enterprise systems that dominantly focus collective benefits and collective usability are in this category. This approach has weaknesses in cases where the needs of each user should be individually captured and dealt with.

From the viewpoint that a great experience leads to high engagement in a service or product, the services and products that mainly pursue the engagement as their top priority, from social experience, are included in this category.

Another approach is the disjointed one, as depicted in Fig. 3.

The pros and cons of this disjointed framework are depicted in Table VI.

By comparison, this approach fits applications where social

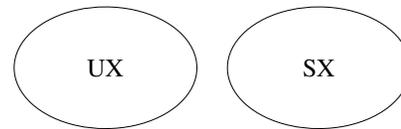


Fig. 3. Disjointed relationship between UX and SX

TABLE VI
PROS AND CONS OF THE DISJOINT SX AND UX APPROACH

Pros	Social settings provide different contexts such as Groupthink. Many multi-user design patterns are different from single-user design patterns. The separation according to the number of users is straightforward and intuitive.
Cons	In social services, a user satisfaction comes from both UX and SX. When the satisfaction from UX and satisfaction from SX conflict, this approach becomes more time-consuming than approaches that deal with both aspects.

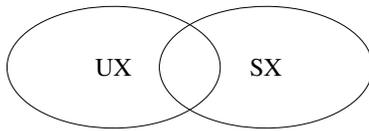


Fig. 4. Overlapping relationship between UX and SX

TABLE VII
PROS AND CONS OF THE OVERLAPPING SX AND UX APPROACH

Pros	The rise of social services creates the increased demand for design of social services. A combination of UX and SX provides a better approach for such services.
Cons	The boundary of overlap is unclear, therefore, it has some overhead and conflicts around the boundary area.

aspects and collective usability have limited impacts on UX. Social aspects with narrow scope and limited goals are isolated from individual user scenes. Voting applications are included in this category. Such applications include the social aspects (collaboration, competition, and informal communications) are explicit and isolated ones. An example is a card game with item-marketing, an education game with competition.

Another approach is an overlapping one, as depicted in Fig. 4.

The pros and cons of the overlapping approach are depicted in Table VII.

By comparison, this approach has strengths in applications where social usability and individual usability are interchangeable. Co-authoring systems are included in this category.

V. VALIDATION OF RELATIONSHIP ASSUMPTIONS

A. Criteria

The criteria for selecting the relationship between SX and UX are depicted in Table VIII.

This analysis leads to a case-by-case selection of relationship models depending on the selection criteria. It should be noted that UX has more design patterns and design methodologies due to its two-decades-long history and that SX is a domain of relatively exploratory practice. Also, SX is more dynamic and difficult to measure and control due to its social characteristics.

B. Validating Use Cases

In order to compare the different assumptions, we need to set up cases to be verified. The cases present the features that cannot be covered by solely a user experience or a social experience design. Sample cases are depicted in Table IX.

Those cases that emphasize social contexts favor the SX-dominance model. The design decisions will depend on how much weight is placed on these social-bound design goals.

VI. DISCUSSION

A. Advantages of the proposed approach

A 3-stage view model of social experience design is depicted in Fig. 5. This is part of an ongoing exercise of how we can integrate social interaction/artifacts into the existing design

TABLE VIII
CRITERIA FOR SELECTING RELATIONSHIP BETWEEN SX AND UX

Criteria	Description	Fits to models
High modularity of design	When a series of design improvements takes place, it should be straightforward without abnormal complexity incurring from the combination of two design methodologies.	The UX-dominance model and the SX-dominance model have high modularity.
Ease of choice in each design stages	It is desirable that selection of design patterns is easy. When each piece of design methodology is applied it is desirable that modularity and consistency are secured.	The UX-dominance model and the SX-dominance model are easier. The disjointed model is the least easy.
Combinability	It is desirable that combination of each methodology is easy to deal with, when each piece of design methodology is applied.	The UX-dominance model has high combinability. The disjointed model has lowest combinability.
Ease of operational feedback	When operational feedback of data mining is applied, it should be straightforward to decide whether the feedback should be applied to which part of design methodologies.	The disjointed model is easier.
Learn ability and convertibility	When a piece of design pattern is easy to learn, and experience of patterns leverages the use of the patterns easily and comfortably on the next occasion.	The disjointed model is easier. The UX-dominance model is second. The SX-dominance model is the hardest due to its SX-dominance.
Low conflict between SX and UX	It is desirable that conflicts between SX and UX are low. It is desirable that such conflicts are predictable and reducible.	The SX-dominance model is the lowest. The disjointed model includes implicit conflicts that are difficult to deal with.

TABLE IX
CASES WHICH REQUIRES CONSIDERATIONS OF BOTH OF USER EXPERIENCE AND SOCIAL EXPERIENCE DESIGN

Case	Description	Fits to models
Shared goal	Tasks require partial cooperation or collaboration	The SX-dominance model has the best fits. The disjointed model has the lowest fits.
Shared environment	Tasks are performed under intensive interpersonal communication environment (isolation leads to abnormality)	The SX-dominance model has the best fits. The disjointed model has the lowest fits.
Engagement	Tasks are influenced by social engagement	The UX-dominance model has the best fits. The SX-dominance model and the overlapping model have the second best. The disjointed model has implicit risks of conflicts.
Social satisfaction	An explicit goal of design includes social satisfaction beyond the sum of personal satisfaction.	The SX-dominance model has the best fits. The UX-dominance model has the second best. The disjointed model has implicit risks of conflicts.

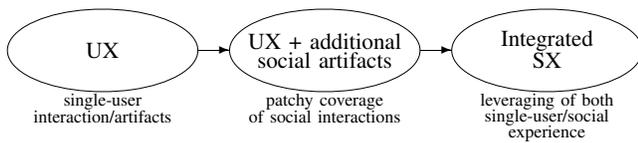


Fig. 5. A 3-stage view model of social experience design

of single-user experience. The disjointed model serves the second stage. The other three models address the third stage. The departure from additional social artifacts depends on how much integrity is required by the design requirements and how much additional benefits we can derive from the integrated approach.

The author examines the relationship models of SX and UX together with their pros and cons. In order to provide a design methodology that combines SX and UX, the author discusses the criteria for selecting the relationship between SX and UX. The criteria provide case-by-case advantages for each relationship model. Then, the author provides the validating use cases that deal with user benefits of SX. From this analysis, the SX-dominance model shows a high suitability.

From this analysis, the selection of a relationship model depends on the relative weight of whether design focuses on the evaluation criteria or emphasizes user advantages in the social context. In the former case, the selection is accomplished based on the weight of each selection criteria. In the latter case, the better fits are observed in the SX-dominance model.

B. Limitations

This research is a qualitative study. The quantitative measures for identifying many of the aspects of social experience design discussed in this paper remain for further study.

User acceptance of social experience design in the real world environment is beyond the scope of this paper. Quantitative analysis of performance and user satisfaction of social experience design requires future research.

The concrete design methodology of social experience design is beyond the scope of this paper.

VII. CONCLUSION

The emerging popularity of social networking services has become increasingly visible. For example, the more than 1.1 billion active users of Facebook, worldwide, is a good indication. This phenomenal growth of social lives on the Internet leverages the need for designing better social experience.

The author presents the four relationship models: the SX-dominance model, the UX-dominance model, the disjointed model, and the overlapping model. The author discusses the pros and cons of each case. Then, the author analyzes the criteria for design choices and the cases that impact social factors. A qualitative analysis indicates a two-level choice flow from priority of deliverables of social contexts and priority of design criteria. The first-level choice depends on the deliverables of social contexts. When it is given the priority, the SX-dominance model provides the best fits. When it is not the dominant factor, the second-level choice is made based on the design criteria. This is a case-by-case criterion from the requirements of methodologies that cover the combined complexity of SX and UX.

The SX design is still its early stages. Not only for its ongoing challenges, but also the dynamic and complex-interwoven features of SX present the obstacles against forming a systematic methodology that combines SX and UX. This research is qualitative, however, it provides the stepping stone for research that combines SX and UX for developing of services that focus on SX, today and in the future.

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