The Essence of Enjoyable Experiences: The Human Needs

A Psychological Needs-Driven Experience Design Approach

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Abstract. A huge shift in design in the industry has widened the design scope from pursuing usability and visual attraction to covering user's comprehensive experience. One of the most important aspects of the user experience design is providing positive and enjoyable experience to the users. While both tangible and intangible approaches are important, only a few practical studies have focused on the intangible aspects such as emotion and human needs. This paper describes the importance of the fulfillment of the user's needs for differentiated enjoyment of user experience design, and suggests a practical design method. The authors propose an experience design process and method, which helps to generate innovative design concepts based on the user's psychological needs.

Keywords: Psychological human needs, Enjoyable experience, Positive experience, Enjoyment, User experience, Design method, Service design, User-centered design.

1 Introduction

Trends in human-computer interaction have been shifting toward consideration of user's experience. A huge shift in design in both the industry and the academia has widened the design scope from pursuing usability and visual attraction to covering user's comprehensive experience. One of the most important aspects of the user experience design is providing satisfaction and enjoyment while the users are interacting with the product, system or service; in short, providing positive and enjoyable experience to the users.

While both tangible and intangible approaches are important [1], only a few practical studies have focused on the intangible aspects such as emotion and human needs. The problem is that the intangible aspect in enjoyable experience is a very broad concept; models often describe experience as sensual, emotional, motivational and temporal [2], or physio (e.g., touch, taste) and socio (e.g., relationship with others) [3]. Yet such models are often not comprehensive and not supported by empirical data. Gaver and Martin compiled a list of needs, such as novelty, surprise,

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diversion, to influence the environment, to extend knowledge and control, intimacy, to understand and change one's self, and mystery [4]. Hassenzahl suggested manipulation, stimulation, identification, and evocation as important needs in the context of interactive products [5]. However, the needs mentioned in those studies are often not comprehensive or not empirically examined.

A unifying needs model by Sheldon et al. [6] integrated many other prominent theories and identified ten salient needs based on empirical evidence: autonomy, competence, relatedness, stimulation, influence, security, physical thriving, meaning, self-respect and luxury (see Table 1). They asked participants question about what is satisfying about satisfying events, and showed that the degree of need-fulfillment was positively related to the intensity of the positive effect. They also concluded that the ten needs are relatively independent from each other; that is, it is possible to discriminate between experiences.

Table 1. A list of intangible aspects based on a review of prominent need theories

Sheldon, et al. (2000)	Gaver & Martin(2000)	Jordan (2000)	Hassenzahl (2003)
Autonomy – Independence			
Competence – effectance	To extend knowledge and control; to influence the environment	Psycho	Manipulation
Relatedness – belongingness	Intimacy	Socio	
Influence – popularity		Socio	Identification
Pleasure – stimulation	Novelty, surprise, diversion, mystery	Psycho	Stimulation
Security – control			
Physical thriving –bodily		Physio	
Self-actualizing – meaning	To understand and change one's self,	Ideo	Evocation
Self-esteem – self-respect			
Money – luxury			

Being inspired by user's fundamental psychological needs is an interesting approach in the experience design process, particularly for developing innovative new concepts.

This paper describes the importance of the fulfillment of the user's needs for differentiated enjoyment of user experience design, and suggests a practical design

method. The authors propose an experience design process and framework, which helps to generate innovative design concepts based on the user's psychological needs.

2 Methods

2.1 Redefining Human Needs

Based on the ten psychological human needs outlined by Sheldon et al., some modifications were made to the more practically applicable method. The first five in Table 1 are the ones already addressed by other user experience models. We further added security, due to its link to usability. Luxury was excluded, due to its marginal role in [6]. Self-respect, although a distinct need in [6], was excluded, because it could be understood rather as an outcome of need fulfillment than a need in itself. Additional needs were added to patch the potential "holes". The most obvious was collecting and preserving meaningful things, a need mentioned by Reiss [7], but not covered by Sheldon. Some modifications were made to be the more practically applicable method (e.g., Competition). It is important to note that our set of needs is not meant as a definite selection; rather we aimed at a concise, streamlined list, covering most of experiences without being overly complex.

In conclusion, six main needs were selected: autonomy, competence, relatedness, stimulation, influence and security.

- Autonomy is feeling like human is the cause of her own actions rather than feeling that external forces or pressures are the cause of her action: *"I can do what I want, the way I want it"*.
- Competence is feeling that human is capable and effective in her actions rather than feeling incompetent or ineffective: *"I am good in what I do"*.
- Relatedness is feeling that human regular intimate contact with people who care about her rather than feeling lonely and uncared of: *"I feel close to the people I care about."*
- Stimulation is feeling that human get enjoyment and pleasure rather than feeling bored and under-stimulated by life: *"I am experiencing new activities.*
- Popularity is feeling that human is liked, respected, and has influence over others rather than feeling like a person whose advice and opinion nobody is interested in: *"I have impact on others"*.
- Security is feeling safe and in control of human's life rather than feeling uncertain and threatened by her circumstance: *"I am safe from threats and uncertainties"*.

Additionally, four sub needs were defined: physical thriving, meaning, competition and collecting.

- Physical thriving: *"I am healthy and physically active"*.
- Meaning: *"My life, my activities have a deeper meaning"*.
- Competition: *"I am better than others"*.
- Collecting: *"I am collecting and preserving meaningful objects"*.

2.2 Suggesting Experience Patterns

Experience design requires bridging the gap between abstract needs and concrete product, service and activities. To enhance the creative concept generation, 17 experience patterns are suggested for the six main human needs: *Keep a secret* for Autonomy; *Homemade* and *Improving, seeding & levering* for Competence; *Shared consumption, Together alone, Being a part of it, Feeling close, Mind reading, Mysterious coincidence* and *Share a secret* for Relatedness; *Serendipity* and *Voyeur* for Stimulation; *Being a hero* and *Image* for Popularity; *The menu, Alpha wave* and *Base camp* for Security.

Experience patterns are always related to particular needs, that is, a pattern is a generic way to fulfill a need. The experience patterns bridge the gap between a need and an activity or product. They condense positive everyday experiences to minimal set of crucial elements. This set is sufficient to explain why people enjoy these experiences and highlight the essence of a whole class of experiences.

Each experience pattern consists of:

- Activities with their sequences if necessary,
- Related thoughts and feelings,
- General rules, which bound and shape the experience,
- Important potential problems and their sequences.

An example of the experience patterns is written below.

• *Name: Keep a secret*

• *Need: Autonomy*

• *Description and insights:*

Many people have "true" secrets. Revealing them would have severe consequence. It would disappoint people they love, they might lose their job or face other severe threats to existence. In this case keeping a secret is a necessity. However, there are also situations where keeping a secret is of its own value.

Having secrets supports autonomy. The self, individuality, is not a closed, well-defined entity. It consists of self-knowledge, but also of other people, possessions and so on. Especially people in close relationships experience a blur of the boundary between one's self and the close partner. To maintain information related to oneself ("self-knowledge", e.g., things done, experiences made, people one knows), which is only known to oneself, creates a boundary between the person and others. By this, it reminds people of their individuality and helps them to define themselves. This is supported by the observation that secrets are an important part of children's development. Although "keeping a secret" is positive, it may create mixed feelings because of the tension between the pleasure of having a secret and the guilt of keeping it from close others.

Self-defining secrets only work if they remain a secret. Even the fact that one has a secret is not to be revealed. Any plain signifiers of a secret (e.g., locked drawers or boxes, password protected parts of computers) must be avoided.

Self-defining secrets are rarely "true" secrets. If they become revealed accidentally, others are often unable to understand why this information was kept as a secret at all. Given the role of the secret, this is easy to be understood: it is keeping the secret per se and not the content of the secret that counts.

- *Stories:*
  John is a busy person. He has a demanding job, hundreds of other things to attend and an active social live. Occasionally, he feels as if he as a person dissolves. He then sneaks out in the afternoon, goes to a café and just reads a newspaper. He never tells anybody and he deliberately goes to a part of town, where he is certain not to meet anybody. The free hour remains his little secret.
  Bernhard has this hard to explain weakness for watching gory horror movies. His wife, Anna, detests this and neither understands nor easily accepts Bernhard's interest in those movies. To avoid constant conflict, Bernhard agreed to fight this "bad habit." He officially threw away his complete horror DVD collection. But, once in a while, when Anna is out, he takes his favorite DVD – the one he managed to save from the garbage – from a secret place and watches it. When Anna comes home and asks Bernhard about his evening, he says "Just wonderful!" and grins. He feels at the same time more alive and a little guilty.

Because of their higher specificity, patterns might not match each and every domain/product. In some cases, the domain/product itself already points at a particular pattern, which in a way "lends itself to application" because of its similarities to the domain at hand. The results may not always be viable, but there is a fair chance of developing interesting novel ideas, which may further lead to innovation. The experience patterns helps the designers match observed behavior and pain points with the proper human needs correctly and suggests the design directions with more actionable details.

2.3 Building a Design Concept Generative Method

Based on the human needs and their matching experience patterns a design concept generative method is built, which consists of five steps.

Step 1. Determine an activity or a product to enhance with experience. Collect all available information about users and their behaviors.

Step 2. Choose a need. Typically, an activity or product suggests a need. (For example, families spend their quality time in front of the TV. Are there any potential ways to enhance the feeling of relatedness while watching TV?)

Step 3. Identify a need-related, applicable experience pattern to shape the experience. Look out for similarities between the activity at hand and the pattern to determine applicability.

Step 4. Contrast a typical current experience with the experience suggested by the chosen experience patterns (Status-Quo-Analysis)

Step 5. Improve the current experience through the activity or product determined in Step 1. Determine ways to shape the experience as suggested by the pattern through a product's functionality, content, presentation, and interaction with users and other products or services.

In Step 2, forcing a need upon an activity or product in is also possible. It may lead to a new insight. (For example, Routines and relaxation are pleasurable as well as exciting and stimulating in TV watching experience. Are there any potential ways to enhance the feeling of security while watching TV?)

3 Results

Using the suggested design method, the authors made various practices and design concepts. In this paper, a couple of concepts are introduced.

(1) The secret digital photo frame. The digital photo frame tends to be located in public places (e.g., office). This may be annoying for users because the photo frame displays personal memories in a public place without filtering. Among the ten human needs, *autonomy* and *memory* are selected to solve this problem. With the "*keeping the secret*" experience pattern, an unique control method is suggested for the private photo viewing, which is turning the photo frame upside down, when no one is around in the office.

(2) The mobile phone as a smart secretary. When the user is not available to answer the phone, the benefit of the mobile phone significantly reduces. Among the ten human needs, *relatedness* is selected along with the "*mind reading*" and "*feeling close*" experience patterns to solve this disconnection between the people. The improved experience includes the caller recognition functionality of the close people and automatic reply when the user is not available to answer, thus synchronizing the user's schedule and context-aware technology.

4 Discussion

This suggested framework and method enables the designers to generate experience designs from both concrete theoretical background and designer's creativity. The human needs and the experience patterns mentioned in this paper capture important aspects of experience. They can spark and guide designer's creativity and the way of thinking.

There is room to define more psychological human needs and to develop the experience patterns further. The suggested experience patterns also can be evaluated and further defined.

In an industry and academia where the authors belong, the suggested design approach is used as a tool to generate the actionable design directions, particularly for the complex and comprehensive experience design such as device to service cross-domain design. There is a fair chance of developing interesting novel ideas, which further leads to innovation.

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