Designing the consumer experience

Rick (H.N.J.) Schifferstein
Pine & Gilmore (1999)
What is an experience?
Framework of Product Experience
Hekkert & Schifferstein, 2008

Definition:
The awareness of the psychological effects elicited by the interaction with a product, including the degree to which

- all our senses are stimulated
- the meanings and values we attach to the product
- the feelings and emotions that are elicited

Hekkert & Schifferstein, 2008
Framework of Product Experience
Schifferstein, Food Quality and Preference, 2010

<table>
<thead>
<tr>
<th></th>
<th>Product focus</th>
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<td>Low in affect</td>
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<td>Aesthetics</td>
<td>Emotion</td>
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Perception in Product Experience
Schifferstein & Cleiren, 2005; Schifferstein & Desmet, 2007

- Each sensory modality receives different inputs
  - Vision: large role in functional interaction; direct links to stored knowledge; attracts attention
  - Touch: substantial role in functional interaction; important for emotional bond
  - Audition: major role in communication
  - Smell and taste: functional role for foods, but not for many appliances; emotional reactions to products

- Stimulation of multiple modalities yields richer experiences (Multi-Sensory Design)
Aesthetics in Product Experience
Schifferstein & Hekkert in Art & the Senses (2011)

Aesthetic = gratification of the senses; sensuous delight

Aesthetic principles may be universal or modality-specific

<table>
<thead>
<tr>
<th>Structural stimulus properties</th>
<th>Meaningful properties</th>
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<tbody>
<tr>
<td>Contrast</td>
<td>Familiarity</td>
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<tr>
<td>Similarity</td>
<td>Novelty</td>
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<td>Balance</td>
<td>Challenge</td>
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<td>Complexity</td>
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</table>
Meaning in Product Experience

Product

Physical object

Brand

Contexts

Package

Meaning

Cultural value

Primary function

Secondary functions

Identity

Affordances

Symbolism
Emotions in Product Experience
Desmet, 2003

- Emotional responses to products differ between individuals
- Not the event (product) itself, but the meaning the individual attaches to the event determines the emotion
## Framework of Product Experience

Schifferstein, *Food Quality and Preference*, 2010

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Measuring Product Experiences
How to measure perception, aesthetics, meaning, emotion?

• Studies that focus on one aspect do not present complete story

• Experience aspects are inter-dependent

• We cannot measure all experience aspects through a single type of approach
  • E.g., questionnaire research requires verbalization and is limited to measuring meanings
How to design for a user experience? Taking a cross-disciplinary approach, this book proposes 14 basic ingredients of experience design processes. A collection of 35 design projects, selected from years of experience-driven graduation projects of Industrial Engineering at Delft University, demonstrates how to use these ingredients. All projects started with the aim to design something.
FROM FLOATING WHEELCHAIRS TO MOBILE CAR PARKS

A collection of 35 experience-driven design projects

Selected work from TU Delft

Edited by Pieter Desmet & Rick Schifferstein
Design for experience

**Understand**
Activities that help understanding the user and usage situation
- Understand the users’ concerns
- Explore a given target experience
- Assess current user experiences
- Explore current user-product interactions
- Conceive of the future context

**Envision**
Activities that help envisioning and defining the target user experience
- Envision the target user experience
- Envision the target user-product interaction
- Formulate the target product appraisal
- Formulate the target product character

**Create**
Activities that help conceptualizing, materializing and testing new concepts
- Create user-product interaction scenarios
- Explore product character associations
- Explore sensory product qualities
- Build experiential models
- Evaluate the user experiences
ViP
Hekkert & van Dijk (2011)

- Products obtain meaning through interactions with people, in relationships with people.

- The context determines the appropriateness of any interaction.

- Explore background of problem: What are the user needs that underlie the problem?

- Define vision of what you want to achieve and want to create. Determine reason for existence.

- Designer should look for possibilities and possible futures, instead of trying to solve day-to-day problems.
ViP
Hekkert & van Dijk (2011)

0. Deconstruction
1. Domain and time frame
2. Context factors:
   States, principles, developments, and trends
3. Context structure
4. Design statement
   What experience would you like to offer people, within the context?
5. Human-product interaction
   How would you like to offer...
6. Product qualities
7. Concept
8. Final manifestation

   Physical, Social, Cultural etc.

   Experience

   Personality, Expression

   Materials, Shape, Components
## ViP compared

<table>
<thead>
<tr>
<th>ViP</th>
<th>Classical design approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>0. Deconstruction</td>
<td>1. Problem definition; program of demands</td>
</tr>
<tr>
<td>1. Domain and time frame</td>
<td>2. Concept</td>
</tr>
<tr>
<td>2. Context factors</td>
<td>3. Final manifestation</td>
</tr>
<tr>
<td>3. Context structure</td>
<td></td>
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<tr>
<td>4. Design statement</td>
<td></td>
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<tr>
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</tr>
<tr>
<td>8. Final manifestation</td>
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</table>
Example: Office furnishing concept
Michelle Kriesels

Context:

At work, people have to cope with new information, insights, developments, expectations

Every person is different and has different needs

People like to develop themselves; they are curious and creative
Example: Office furnishing concept

Intended user experience:

Give office workers the confidence to trust their intuition and make choices unconsciously

So that:

- Diverse or new manners of communication and cooperation will arise
- They can discover and learn more during work
Example: Office furnishing concept

**Interaction metaphor:** The public garden

Enable intuitive behaviour: read a book, walk the dog, play on the grass, have a picnic

Be amongst other people; have spontaneous and unexpected forms of contact

Be inspired by other activities
Example: Office furnishing concept

Product qualities:

Subtle
Undefined
Multi-purpose
Diverse
Multisensory
Example: Hospital waiting room

Marcus Boesenach
Example: Hospital waiting room
Example: Hospital waiting room

- Hospital environments are unpleasant and do not support the healing process
Example: Hospital waiting room

Marcus Boesenach

- Powerlessness
- Restlessness
- Exposure

- Trust
- Acceptance

- Increased self esteem
- Peace
- Relaxation
Example: Hospital waiting room
Example: Hospital waiting room
Example: Hospital waiting room
ViP
Hekkert & van Dijk (2011)

0. Deconstruction
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Physical, Social, Cultural etc.
Experience
Personality, Expression
Materials, Shape, Components
Multi Sensory Design
(e.g., Schifferstein in Delft Design Guide, 2010)

Designing *for* an experience = designing the experienced *expression* of the object

Sensory concept of expression

<table>
<thead>
<tr>
<th>Product</th>
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<tr>
<td>Visual</td>
</tr>
<tr>
<td>Tactual</td>
</tr>
<tr>
<td>Auditory</td>
</tr>
<tr>
<td>Olfactory</td>
</tr>
</tbody>
</table>
Explore → Design

- Visual samples
- Auditory samples
- Tactual samples
- Olfactory samples

Integrated sensory concept of expression

Product
- Visual properties
- Tactual properties
- Auditory properties
- Olfactory properties
Multi Sensory Design (MSD) in 8 steps

- Select expression
  The product should be arrogant, friendly, naïve, wise, cheerful, tough, lazy, elegant
- Conceptual exploration
- Sensory exploration
- Sensory analysis
- Sensory-conceptual integration
- User interaction scenario
- Model making
- Multisensory presentation
Multi Sensory Design (MSD) in 8 steps

- Select expression
- Conceptual exploration
  When I say ‘natural’, I think of...
  - Sensory exploration
  - Sensory analysis
  - Sensory-conceptual integration
  - User interaction scenario
  - Model making
  - Multisensory presentation
Multi Sensory Design (MSD) in 8 steps

• Select expression
• Conceptual exploration
  When I say 'natural', I think of…
• Sensory exploration
• Sensory analysis
• Mind map
• User interaction scenario
• Model making
• Multisensory presentation
Multi Sensory Design (MSD) in 8 steps

- Select expression
- Conceptual exploration
- Sensory exploration
  Gather materials that are all perceived as ‘natural’
  How does ‘natural’ smell, feel, taste, look, sound?
- Sensory analysis
- Sensory-conceptual integration
- User interaction scenario
- Model making
- Multisensory presentation
How does ‘naturalness’ feel, smell, look, sound, taste?
Sensory exploration

- Close your eyes, bring objects close to your senses
- Explore environment, direct attention to common objects
- Move objects, use objects, take objects apart
Multi Sensory Design (MSD) in 8 steps

- Select expression
- Conceptual exploration
- Sensory exploration
- Sensory analysis

What are the sensory dimensions that underlie ‘naturalness’?

Make a sensory map
- Sensory-conceptual integration
- User interaction scenario
- Model making
- Multisensory presentation
Multi Sensory Design (MSD) in 8 steps

- Select expression
- Conceptual exploration
- Sensory exploration
- Sensory analysis
- Sensory-conceptual integration
  Combine results of sensory analysis, conceptual exploration, and brand analysis in one map
- User interaction scenario
- Model making
- Multisensory presentation
Knorr’s current soup package

**Vision**
- Appealing/Impressing
- Appetitive
- Freshness

**Touch**
- Artificial/Plastic
- Sharpness
- Hurtful
- Unconnected with the product

**Audition**
- No relation to the product
- Crinkled sound

**Olfaction**
- No smell when closed
- Sudden during opening & use
- Product’s smell remains on the package
Communicating ‘naturalness’ in Knorr’s soup packages
conceptual map with sensory characteristic

- **TOUCH**
  - variety
    - textural relief
    - variety in textures
  - comforting
    - relieving
      - organic & round shapes
      - tenderness, structure

- **VISION**
  - origin
    - relation of outer material - inside content - ingredients’ characteristics - recipe’s home origin
  - quality
    - appetite
      - content
      - solidness
      - freshness

- **AUDITION**
  - sounds coming from the content & related to its qualities

- **OLFACTION**
  - evolvement in time
    - smells gradually released & fade in time

- **excitement**
  - food ritual
  - communicates the content’s qualities

- **stimulation**
  - familiarity

- **convenience**
  - the package consists part of the environment (storage - use - disposal)

- **narration**
  - different sounds during the product’s life cycle
Multi Sensory Design (MSD) in 8 steps

- Select expression
- Conceptual exploration
- Sensory exploration
- Sensory analysis
- Sensory-conceptual integration
- User interaction scenario

Make a complete story:
Who is the user? What is the context? How does the interaction evolve?
How are senses involved in each stage?
- Model making
- Multisensory presentation
During Purchase

1. Through vision, the consumer is attracted to the product on the shelf. After this, the product is being selected for purchase.

2. Audition is stimulated when the package is being torn in order to be removed from the shelf. It is also stimulated by the crispy sounds coming from the packages' materials. When the package is placed in the basket, the consumer can hear the sound of the product inside.

3. The consumer feels the different textures of the materials, when obtaining the package.

4. The consumer experiences a 'natural' smell coming from the with aroma impregnated outer material of the package.

At Home (storing it)

4. All the senses are stimulated while the consumer removes the package out of the shopping bag and stores it.

At Home (opening it)

5. Touch, audition and olfaction are simultaneously stimulated as the consumer holds the package and tears to open it. Apart from the package's smell, the consumer experiences the olfactory properties of the product inside.

At Home (using it)

6. The sense of smell is stimulated more as the the package's content is poured into the boiling water.
Multi Sensory Design (MSD) in 8 steps

- Select expression
- Conceptual exploration
- Sensory exploration
- Sensory analysis
- Sensory-conceptual integration
- User interaction scenario
- Model making
  Make collages and physical models for each modality:
  - use clay, foam, materials, sounds, fragrances
- Multisensory presentation
Multi Sensory Design (MSD) in 8 steps

- Select expression
- Conceptual exploration
- Sensory exploration
- Sensory analysis
- Sensory-conceptual integration
- User interaction scenario
- Model making
- Multisensory presentation

Use story board, with attention for all modalities, present physical samples
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Edited by Pieter Desmet & Rick Schifferstein
Ilse Kroesen

Project
Kids' pill dispenser

Title
Kids' pill dispenser

Designer
Ilse Kroesen

Company
Betronic Design

Graduation date
November 2003

Supervisory team
Chris Snoijders
Arnold Vermeeren
Annemiek van Boeijen
Freerk van Oudheusden
Wim van der Pol**
(Betronic Design)
Reinier de Graafghuis**)
Koen Vorst

Project
A modular rest unit for a recovery room
Title
Link – Sports for blind children

Designer
Gina van der Werf

Company
Stichting Bartiméus

Graduation date
February 2005

Supervisory team
Paul Hekkert
Marieke Sonneveld
Theo Rooden
Babette Hamburger
Marten van Doorn

*(Ontwerpbureau Go)*
**(Stichting Bartiméus)**
How to innovate, using a target experience?
From Experience-Driven Design
To Experience-Driven Innovation

Understand
Activities that help understanding the user and usage situation
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Model of the Product Innovation Process (Buijs & Valkenburg, 2005)
Discrepancies with industrial business:

• More complex design assignments: multiple departments, external parties involved
• Project needs to fit in organization: brand positioning, company image, production schedules

How does this holistic design strategy work in practice?

• Make departments work together
• Support project over time
Organizational measures

1. Develop overarching company mission
2. Integral project management over time
3. Strategic road mapping
4. Interdisciplinary teams
5. Break through organizational routines
6. Use and develop human resources
7. Create employee freedom
8. Build external relationships
9. Internal technological development
10. Build knowledge on latent user needs
To Experience-Driven Innovation

Tools supporting the design process

1. Develop open context vision
2. Develop experience vision statement
3. Pay attention to multiple layers in the user experience
4. Include the time dimension of user experience
5. Involve multiple design disciplines
6. Touchpoint orchestration
7. Empathy tools
8. Formalize brainstorming routines
9. Quick and dirty prototyping
10. Create and present conceptual prototypes
11. Co-create with end users
12. Formalize choice among ideas
Experience-Driven Innovation

Take a minute to set up your open group for success.
Modify write permissions in Group Settings »
Edit your Group Rules »

Start a: Discussion Poll

Start a discussion or share something with the group...

Choose Your View - NEW Show all RSS discussions

Latest Discussions

At the moment we are working on a new website on Experience-Driven Innovation. For this website, we are looking for companies who would... For each project, we would like to have a description of the project and visual materials that illustrate the project. For more detailed...
posted 21 days ago

CfP CHI2012 Workshop on "Theories behind UX Research and How They Are Used in Practice"
Theories Behind UX Research and How They Are Used in Practice di.ncl.ac.uk
At CHI2011 we organized a SIG session asking the question “What theoretical roots do we build on, if any, in UX research?” Overall, 122 single items from about 70 participants were collected, which corroborates the relevance of...
posted 3 months ago
Welcome to Experience Driven Innovation

We created this website for people who want to improve peoples daily experiences with the products and brands they buy, the services they obtain, and the websites they visit. By taking the users’ experience as the starting point of the innovation process, future interactions between consumers and their products are likely to become more diverse, more interesting and more engaging. Feel free to join our community and contribute to the creation of experience-driven innovation!

Documents

Overall Aim

Feb 08, 2012 | 0 Comments

Projects

Project: Heritage Browser

Feb 22, 2012 | No Comments
Projects

Here you can find example projects that have used an experience-driven innovation approach. All these projects led to an end result that was realized. Currently, we are still looking for additional projects that may be added to our website. In order to show the wide applicability of our innovation approach, these projects may include a product that was introduced on the market, a service provided by a government agency, the design for a retail store that was built, and so on. If you would like to add one of your projects, please contact us or click here.

**Project: Heritage Browser**

Feb 22, 2012 | 0 Comments

The Heritage Browser is a multi-user interactive installation based on a multitouch table for Public libraries and City Archives. By using only their membership card, library visitors can view images of their own street. The multitouch interface allows for visitors to search alone or together, without further knowledge or computer skills. By immediately showing the images they recognize they are selecting the right image and can stop the search.

**Project: Pogi**

Feb 06, 2012 | 0 Comments

The Pogi is a playful object, developed for children with ADHD. It can be described as a three-dimensional hoop, which is connected to the floor and the ceiling with elastic straps. The design and construction of the Pogi allow children with an excess of energy to let off steam while they play with it. After my graduation I approached Janssen-Fritsen, the Dutch market leader on gymnastic equipment for schools, to see if they would be interested in producing the Pogi. The project was eventually realized.
Thank you!

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