

TOWARDS A CONCEPTUAL FRAMEWORK FOR EXPERIENCE-DRIVEN INNOVATION

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ABSTRACT

Companies that aim to evoke specific experiences among their customers, should not only modify their design process, but also need to reorganize their innovation processes. Experience-driven innovation has implications on at least three levels in the organization: company, brand, and product/service level. The creative process at each level can be characterized by four stages: context description, vision formulation, concept generation, and end result. To support the innovation process, companies may take organizational measures and employ tools to support the design process. We suggest a number of these for inspiration purposes. We hope to improve our conceptual framework further through the use of an interactive website, on which users can comment on the framework and upload sample projects.

Keywords: user experience, radical innovation, design-driven innovation, experience-driven design, design thinking.

INTRODUCTION

In industrialized societies, many daily human experiences are evoked by products: People love the smell when their espresso machine is brewing a fresh cup of coffee, they are engaged by the latest computer games, they get annoyed when they cannot open a blister package, they get excited by the possibilities of their new computer tablet, and so on. Especially in saturated markets, consumers do no longer select products for their functional roles, but they look for superior usability characteristics or engaging experiences. Hence, product usage and

purchase are more and more dependent on whether the product or service is able to elicit a distinctive, appropriate experience and company profitability may depend on the experiential qualities of the company image and its brand(s).

Because experiential qualities become more and more important for market success, companies become more interested in creating specific experiences. Companies may innovate their business by aiming to deliver specific consumer experiences, and they may hire designers to create these experiences for their customers. But in what way does the company need to adapt their innovation process in order to enable experience-driven design? This is the central question we would like to answer.

Desmet and Schifferstein (2011) outlined an experience-driven design approach that was developed at Delft University of Technology, and they presented 35 graduation projects that all aimed to create a specific user experience. However, many of their projects were not actually implemented, and the practice of industrial business may be quite different from the idealized situation of the graduation design projects in the book (van Erp, 2011). Generally, design assignments in practice are far more complex than the well-defined context of a graduation project. Design projects in industry typically involve multiple parties. Several departments may be involved in the project, such as engineering, marketing, design, and finance. In addition, a number of external parties may be involved. A design agency may be responsible for the product design project as a whole, and other parties provide expertise on technical issues, environmental impact, product advertising, and so on. Furthermore, the design project will need to fit in the

organization: The design has to fit with the brand positioning and the company image. In addition, the company should be able to fit the new product in their production schedules.

Therefore, we would like to focus on how experience-driven design fits in a business context. Experience-driven design is a holistic approach: The design team tries to make all different elements of the design (e.g., function, appearance, grip, sounds, communication) support the consumer experience. However, many companies have different departments with different types of expertise. How can you make sure that these departments will work together? How do you make sure that they do not compete with each other or kill each other's ideas somewhere down the line? Do you need to create special teams? Do you need external experts? How do you support an experience-driven design process?

WHAT IS EXPERIENCE-DRIVEN INNOVATION?

In our view, the Experience-Driven Innovation (ExpDI) process is characterized by an innovation process in which design plays a central role, combined with a design process in which the creation of a specific user experience forms the starting point for the design. Using experience as the driver of innovation does not only imply a modification of the design process; it has implications for the entire organization. Hence, an organization that really wants to innovate, needs to start by innovating itself. In order to produce innovating products and services, the organization will need to reinvent itself over and over again.

Many companies create user experiences for customers at different levels. For instance, a company may communicate to customers through a corporate image or through a number of brand images. All these images may evoke particular experiences. In addition, the company tends to be in contact with consumers through the products they make and the services they provide. All these encounters are sources of experiences. Therefore, the company may create different types of experiences for their customers. It is important to be aware of all these different types of experiences that are created, and to make sure that

there is coherence between the different experiences that are evoked.

Please note that it may not be possible to fully predict the experience that the customer will have, because this experience does not only depend on the design, but also on context-related factors, such as the user's momentary mood, the situation in which the product is encountered, what other people are involved, and so on. Nonetheless, the aim of ExpDI is to create the optimal conditions for the users to have a particular experience.

THE EXPERIENCE-DRIVEN INNOVATION MODEL

ExpDI may have implications in the company on at least three different hierarchical levels: At the level of the company, at the level of the brands within the company, and at the level of the individual product or service offerings. These three levels are interconnected: Decisions made at the level of the company image have implications for the types of brand images that fit under the umbrella of the company. On its turn, the brand image has consequences for the types of products and services that it can carry. On their turn, the products and services should support building the brand image and should contribute to the brand equity, and the various brands should support the company image.

1. **Company level.** Several authors have suggested that companies and organizations may benefit from a more prominent role for designers and design thinking. This would imply that the organization takes a rather holistic and long-term strategic view on innovation. Rozendaal (2010) describes the relationship between the company, designers, and end users in experience-driven design as democratic, because the relationship between the different parties becomes rather equal: mutual trust and understanding is very important.
2. **Brand level.** According to Roscam Abbing (2010) 'Brands can be strong foundations for innovation if you see them as the relationship

between the organization's vision, culture, resources and capabilities on the one hand, and the user's needs, desires, dreams and aspirations on the other. Building a brand-based innovation strategy requires a usable brand that functions as a lens to view and interpret external influences, and as projector to focus and filter internal influences' (p. 127). Hence, the brand can play the role of an intermediate in the communication between the company and its customers.

3. **Product/service level.** The individual product or service offerings provide the most concrete and direct opportunities for interactions with potential users. Here, all sensory touch points and personal interactions contribute directly to the customer's experience.

The creative process at each of these levels can be described in four different, general stages. These stages are called here the context description, vision formulation, concept generation, and end result. Because creating particular experiences is central to the creative process, experience-driven design involves at least two important challenges: The first is to determine what experience to aim for, and the second is to make a design that is expected to evoke that experience.

1. **Context description** involves the description of the context for which the innovation is developed: It provides an overview of the existing situation. It implies an analysis of external states and developments. In addition, it provides an assessment of the internal qualities of the company. It evaluates how the company and its environment will change over time, since the innovation will come to life only in some nearby future.
2. **Vision formulation** involves the development of a vision on the company, the brand, and the new offerings. Based on the sketch of the future context, the company needs to develop ideas on what they would like to offer to future customers. Here also the experience comes in: In ExpDI the visions typically describe what the company would like their customers to

experience: how will they feel, what will they think, what will they sense?

3. **Concept generation:** After the company has decided what they would like to offer, they can start to generate ideas on how this promise can be fulfilled and they can develop concepts that match the intended offering, under the current set of constraints. Questions to be asked here are: Who will be the users of the design? When will they use it? Under what circumstances? What will the design do? How is it operated?
4. **End result:** In the final stage, the concept is transformed into reality, by looking for materials, products, and people who will make it happen.

Eventually, the end results generated in the different creative processes will contribute to the future context for subsequent projects. Hence, the circle is closed and new innovation processes can start again. This leads to the following sketch of the innovation model (Figure 1):

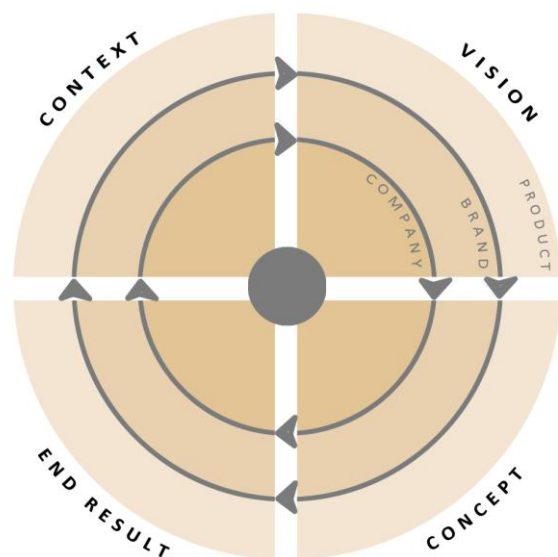


Figure 1. The Experience-Driven Innovation model

The sketch of the innovation model shows how the company (the core of this model) relates to the customers (consumers, users) in the outside world. It starts out from the company itself (its buildings,

employees, intellectual property, financial means, procedures, and so on) and describes how the company connects to the outside world. Through the company image, the brands, and the products and services, the company tries to build relationships with product users and other stakeholders. The experiences the company offerings elicit among their customers will affect how the outside world perceives the company.

Although the model contains stages that suggest a hierarchical and logical sequence, this does not mean that companies go through them in a chronological order. Typically, we will see many iterations, because changes in one stage or at one level having consequences for other stages at other levels. All these interdependencies make innovation such an interesting, but demanding process.

The subjective experiences among current and future users and other stakeholders in the outside world are explicitly part of an ExpDI process. This implies that the vision development is likely to contain elements describing the targeted changes in user experience, independent of the hierarchical level for which the vision is developed. And changes in the vision will have their effect on the concept and the end result obtained, and thus on the future context the user lives in.

The ExpDI model deviates in important respects from traditional innovation models. The ExpDI model explicitly takes into account that innovation takes place at the company, brand, and product levels in the organization simultaneously and interdependently. Because the innovation processes may differ between these different levels, we have described them here in four common, general stages. Other innovation models typically single out one particular innovation process and make more fine-tuned distinctions between multiple stages. In addition, many innovation models are presented linearly, starting out from the strategic decision to start an innovation, and ending with the launch of a product or campaign (e.g., Ulrich and Eppinger, 1995; Roozenburg and Eekels, 1995). In contrast, the ExpDI model follows the circular shape proposed by Buijs (2003), indicating that each innovation adds to the existing world and, thereby, to

the context for new innovation processes. In addition, the circular shape enables a clear distinction between internal company processes and events in the external environment.

ORGANIZATIONAL MEASURES

In order to support the Experience-Driven Innovation process, companies may take several organizational measures. We have gathered some of these below. These measures were mainly obtained from the innovation management literature in which a central role for the design process is emphasized (e.g., Beverland & Farrelly, 2007; Brown, 2009; Dougherty, 1992; Verganti, 2009). Our list is intended as a source of inspiration, providing an overview of all different types of aspects that are likely to support the ExpDI process; it is unlikely to be complete.

Develop overarching company mission. The company we look for has an overarching purpose, in order to provide a sense of direction for the individual projects. Preferably, the company could indicate what and how they would like to improve consumers' lives. Possibly, the organization takes a leadership position on important social issues, such as sustainable production and thoughtful consumption. Ideally, every employee needs to understand, appreciate, and should have the ability to contribute to the overall vision of the company.

Integral project management over time. In order for experience-driven projects to deliver superior outcomes, the project management should make sure that original ideas, including the richness of the design, do not get lost somewhere down the line. Consistent management over time makes sure that the original value of the concept is communicated to the entire team, and is maintained until the end product is produced. Management should recognize the importance of intangibles to the firm's value-creating processes. Teams need to avoid being diverted by constraints emerging downward in development that can jeopardize the identity of the vision (Verganti, 2009). Experience design processes tend to be rather unpredictable, especially during the initial stages (Rozendaal, 2010) and, therefore, it is important to share initial viewpoints among all

stakeholders and to communicate frequently among the project partners, in order to keep everyone on track and involved.

Strategic road mapping. Road mapping enables the organization to make strategic decisions about the optimum timing for specific activities, such as the consecutive introduction of new technologies, consumer experiences, or product variants on the market.

Interdisciplinary teams. Departments within a company and people in different fields of expertise tend to use their own mental models and interpretive schemes. They may live in different worlds of thoughts, thus hampering communication. Each discipline has a distinct system of meaning which colors its interpretation of the same information, focuses on particular problems while neglecting others, and produces a qualitatively different understanding of the innovation process. Each discipline has knowledge that contributes to the final design and, therefore, forming multidisciplinary teams in which all departments are represented is important for successful innovation (Dougherty, 1992). Also, people with different levels of experience may be useful, as new comers bring a new perspective on established practices. Team members should not only defend their personal expertise and be responsible for part of the project. They should also form new ideas together. They should collectively own and feel responsible for all ideas generated and the project as a whole (Brown, 2009).

Break through organizational routines. Organizational routines tend to reinforce the separation of thought worlds by limiting the interactions between people from different departments. Existing procedures typically promote within-department efficiency and inhibit the collective action that is necessary for innovation (Dougherty, 1992). Another problem with standardized tools and procedures is that others can copy them. Therefore, in order to be innovative, each project has to create its own organizational structure, depending on the specific needs of the project. Corporate management should establish incentives for business units to collaborate in new ways.

Use and develop human resources. The success of product innovation processes highly depends on the quality of the company's employees. Companies have to learn how to spot the most innovative thinkers within the organization. In addition, they can develop their innovation potential by giving workshops, performing pilot projects and sharing inspiration within the organization.

Create employee freedom. Create an environment that values risk-taking and constant questioning in the pursuit of continuous improvement (Brown, 2009). Employees should be permitted to explore the full range of their faculties. Any experiment should have a chance to gain organizational support. A physical space where a group of people can be creative will support the innovative process. This space should allow project materials, such as photos, storyboards, concepts, and prototypes to be available all of the time. The project space will support better collaboration and better communication with partners and clients. In addition, a project website or wiki helps to keep team members in touch when they are out in the field. Flexibility is a key element of design thinking. Therefore, the designated physical and virtual space, and also the budget should be adaptable.

Build external relationships. Many innovation projects benefit from external input. It is important for the company to set up a privileged network of relationships with external parties. Relational knowledge is tacitly preserved and nurtured by the people in the organization. As it involves their personal relationships to others, this cannot be easily copied by others (Verganti, 2009). The nature of these assets is cumulative: the more privileged relationships you have, the more you are likely to use these contacts to develop breakthrough innovations and develop seductive visions. You can also hire external experts on a project basis: The active participation of partners will yield more ideas and creates a web of loyalty that will be hard for your competitors to erode. Alternatively, you could set up open innovation projects, or involve external designers by initiating design competitions.

Internal technological development. You have to master unique technologies, in order to be an

interesting partner for cooperation or discussion. Invest resources in research and development that provides new technology in order to develop new solutions. Develop technologies that you yourself or others would like to use (Verganti, 2009).

Build knowledge on latent user needs. In order to design a successful new product, you would like to know what your future clients do, think, and feel. Therefore, you should try to uncover the latent needs users may not even know they have, in order to accommodate their future needs. Typically, this requires nontraditional marketing research techniques, including observational work, ethnographic studies, and in-depth interviews. It is important to focus on the quality of the information obtained, not on quantity. Try to connect with the people you observe by getting in their role: Experience the design from the client's point of view.

TOOLS SUPPORTING THE DESIGN PROCESS

In order to support the Experience-Driven Design process, companies may employ several tools, some of which we have gathered below. Again, our list is intended as a source of inspiration and it is unlikely to be complete.

Develop open context vision. When developing a context for the creative process, it may be important to create as much design freedom as possible, and thereby limit the number of actual constraints to a minimum (Hekkert and van Dijk, 2011). Defining the context implies determining the domain for which the design is made. The design space is determined, the problem is defined, and possibly a program of demands is developed. The context may include the social and cultural context, a political context, but may also imply a physical context. In addition, because the end result will be introduced in the future, you need to define the time period for which you are creating: It can make a large difference whether your results will be introduced in two or five years.

Develop experience vision statement. The company develops a vision on what type of experience you would like to evoke among future customers. This goal can be formulated in terms of an

intended experiential user effect or 'target experience'. It is also a statement on what you would like to contribute to the future world. It is important for the statement to carry authenticity: Ideally, the statement should address a fundamental customer need (Hekkert and van Dijk, 2011).

Pay attention to multiple layers in the user experience. Experiencing a design may involve different layers: materiality, function, interaction, sensory perception, aesthetics, meaning, emotional responses, and so on. If the different layers are considered during the creative process, this will enhance depth and richness during the design process. In order for a design to trigger a certain experience, the customer will need to interact with it in a particular way, and the product needs qualities that support this interaction. Therefore, it may be helpful to try to translate the characteristics of the target experience into a set of interaction qualities, which on their turn can be translated in a set of desirable product qualities (Hekkert and van Dijk, 2011). The interaction qualities should support the authentic character of the target experience. The interaction may involve actions with physical objects, it may involve manipulations of virtual objects, or it may involve cognitive processes like anticipating certain effects or imagining a specific event. Oftentimes analogies or metaphors are used to summarize the character of the interaction (e.g., like a river, a sunny day in the park, lying in a hammock). Subsequently, you may want to determine the character of the end result that is most likely to evoke the aimed for interaction qualities and customer experience. What does the design express? How would you describe its personality?

Include the time dimension of user experience. A user experience typically evolves over time, as the user interaction progresses. Telling stories helps to connect ideas and to create user scenarios. Storytelling may begin early in the life of a project and may be woven into every aspect of the innovation effort. Writers may be involved from the start of the design process to help move the story along in real time. A scenario may grow and develop into a description of a consumer journey, including all the events a consumer experiences while engaging with a

brand, product, or service. The story could also be an open-ended narrative that engages people and stimulates them to carry it forward and fill in their own conclusions (Brown, 2009; Roskam Abbing, 2010).

Involve multiple design disciplines. To bring offerings to life, multiple design disciplines may work together, to provide the optimum effect. You can include product design (engineering, styling, packaging design), communications design (graphic design, advertising, digital media, corporate identity, signage), interaction design (physical interactions with buttons, controls, and levers, interface design), environment design of outlets (architecture, interior design, exhibition design), service design (guarantee forms, personal interactions, complaint forms, call center procedures), and so on (Roscam Abbing, 2010).

Touch point orchestration. Consumers interact with companies in many different ways. They may receive corporate information through publicity in the media, they see brand advertisements on TV or in magazines, they interact with personnel during the buying process or at the customer service desk, they unwrap packaged goods, they sample products in stores, and so on. Ideally, the different design elements that consumers experience should work together like the instruments in an orchestra to create the overall experience. Just like the instruments in the orchestra each have a different character, the design elements do not need to be similar in order to work together in creating a great and engaging experience (Roscam Abbing, 2010). Touch point orchestration makes sure that all different elements work together and in the right order, in order to create the desired user experience (Schifferstein, 2011).

Empathy tools. Using empathy tools helps the design team to stay connected to the targeted user experience. Besides the vision statement, the team may create a mood board communicating the emotional impact of the targeted result. Alternatively, a persona may be created, which provides a vivid representation of a fictitious end user, indicated with a realistic name, whose life is described and made explicit with a number of snapshots (e.g., Sleeswijk Visser, 2009).

Formalize brainstorming routines. Brainstorming sessions are valuable in the creative process, not only for the ideas that pop up during the session, but also for the concepts and solutions that occur to people later, at home, due to the seeds planted in their minds. Some companies have formalized the routine procedure used during brainstorming to optimize the output of these sessions. For instance, IDEO uses the following rules: Defer judgment, build on the ideas of others, hold one conversation at a time, stay focused on the topic, and encourage wild ideas (Brown, 2009).

Quick and dirty prototyping. Encourage quick, cheap, and dirty prototyping as part of the creative process and not just as a way of validating finished ideas. Use visual and physical tools, not just abstract words, to generate ideas. By creating tangible, physical objects, you make use of different faculties and different types of knowledge compared to when you are only talking and thinking. In addition, you can act out situations to explore how the prototypes work and what is needed to improve them (Brown, 2009).

Create and present conceptual prototypes. Conceptual prototypes, such as concept cars presented at car fairs, materialize a company's vision for the future. They make ideas physical and tangible, and their creation helps in investigating the feasibility of ideas. They may be an important tool inside the company to streamline the flow of creative ideas and to show the directions in which the company is heading. In addition, by presenting the new product at an exhibition or making a book for researchers, colleagues will get to know about the product, they will talk about it to others and may describe it in magazines for the general public. Ideally, the new product should create a buzz. Hence, books, exhibitions, cultural events, concept presentations at fairs, journal articles, websites, and design competitions all serve to generate free publicity on a new design (Roskam Abbing, 2010; Verganti, 2009).

Co-create with end users. End users may be involved actively in the design of the new brand, product, associated services (e.g., websites, interactions with sales staff, social networks), and retail experiences. For instance, designers may develop tools that enable consumers to create their

own products. Researchers can study consumers while they are using such tools. Also, designers can create experiences, by involving consumers actively in the store (e.g. cooking in a supermarket). Involving consumers in creating and using products may increase the chance of success in the market.

Formalize choice among ideas. In order to make the right choices when you evaluate ideas, develop a good procedure and involve the right people. Criteria that are often used to evaluate ideas include the expected functionality of the end product and people's expected motivations for buying the product. Furthermore, the available production facilities and the expected costs are likely to affect decision making. Another criterion may be the product's potential for a long life cycle: does it satisfy deeper needs? Is it clearly linked with the brand identity? Furthermore, ideas that create a buzz should be favored. Measurement of impact helps to make the business case and ensures that resources are appropriately allocated. If each team member chooses the three best ideas by putting a mark on them, you can select the ideas with the largest number of votes (Brown, 2009).

FUTURE PLANS

The present paper is not intended as the end result, but rather as our starting point for building a conceptual framework of Experience-Driven Innovation. We have provided a sketch for an innovation model, we have provided an inspirational list of organizational measures that support innovation processes, and a list of tools that may be helpful in the creative design process. However, we would like to let our insights grow and we hope to build a validated model through interactions with professionals who have used ExpDI in practice. Therefore, we have created a website www.expdi.org, which allows you to comment on the current manuscript. In addition, the

website provides an opportunity to upload projects in which ExpDI was used. At the conference, we hope to present a number of these projects. Through the projects, we hope to get an overview of best practices employed in industry, and we hope to create an inspiring forum for future innovation projects.

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