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Changing assumption for the design process
– New roles of the active end user

Summary
The aim of this article is to discuss how end user involvement in all stages of a product life cycle changes the assumptions of the design process. This article is based on a literature review and three case studies – Imsdal (Ringnes/Carlsberg), Jordan and Stokke. Several examples of how consumers or users are involved in various stages of the product life cycle are presented. The product development is affected both by end users' activity and by previous knowledge of the product. The use of the product is changing the meaning, and even the disposal of the product is affecting how the product is perceived. The product becomes part of a cultural and historical context in which the end user is actively shaping.

Keywords: user, consumer, product design, product life cycle.

Introduction

> The passive consumer is characterized by an acceptance of what is available without critical reflection on real value. The active user defines his or her needs and then chooses objects from the environment to satisfy them (Margolin 1983).

The quote above is from a keynote speech Victor Margolin gave at the International Council of Societies of Industrial Design (ICSID) conference in 1983. In his paper at the conference, Margolin presented two conflicting categories of people who are audiences for the work of designers: 'consumers' and 'users.' The consumer is presented as 'passive,' while the user is 'active' in defining his/her own needs and choice of products. In his paper Margolin urges designers to design for an 'active user' instead of what he describes as a 'passive consumer.' The passive consumer as described in Margolin's paper is blinded by marketing campaigns and thus not able to define the product's value or judge of the quality a product offers.

Three decades later, designers seem to work with the image of an active user and not a passive consumer. Emerging fields within design such as service design and user experience design all promise a user centred focus in the design process. However, also within marketing, where one approaches a 'consumer' and not a 'user,' the image has changed towards an active 'consumer' (Holt 2002). The consumer is not only presented as an audience, but as the most important member of the company. The traditional top-down structure with management on the highest level and employees at the bottom has been replaced with models that place consumers at the top (Grönroos 2007).

The aim of this article[1] is to discuss these notions of the active consumer and user, and examine how the shift from viewing the design audience as passive to an active user in design and an active consumer in marketing has changed the underlying assumptions of product design.

This discussion is based on a trial lecture I held at the Oslo School of Architecture and Design before defending my doctoral thesis in 2008. In addition to a literature review, I will present examples of end user activity from three case studies that also were explored in my thesis. This article only includes those aspects of the cases that are relevant to the debate about the active/passive consumer/user.[2] The first case is two toothbrush models ('Go!' and 'Individual', see images 1 and 2) from the company Jordan AS (marketed as 'Wisdom' in the UK market). The second case is the development of the 'Xplory' children's pram (see image 3) by Stokke AS. The third case studied the creation of two new water bottles for the 'Imsdal' mineral water label (see image 4), produced and distributed by Ringnes AS(Carlsberg Group).

Image 2: Jordan Go! (Credit: Jordan AS)

Image 2: Jordan Individual (Credit: Jordan AS)

In the following text I will first present how the user perspective has changed in design and how the consumer perspective has changed in marketing. I will then show some examples from the aforementioned case studies which show how marketers and designers are involving users or consumers in different stages of the product life cycle. Finally I will discuss how the active user and consumer provide new dimensions to the product development process and as such give new roles to the designer.

Image 4: Stokke Xplory (Credit: Stokke AS)

Image 3: Imsdal bottle 2008 (Credit: Ringnes AS)

Towards a user/consumer who is active in all stages of the product life cycle

As Margolin shows, the designer has not always had a user focus in the design process. In the 1950s, the design community started to look at the user as the core interest for their design process. Canonical works of literature that changed designers' perspectives include Henry Dreyfuss' (2003 [1955]) *Designing for people*. In Dreyfuss' (1967) work, anthropometric charts of users -'measuring users' – was included to support the designers in their design work. By introducing these metrics, the field of design also led into a scientific way of thinking, and the designer became 'the user expert' (Valtonen 2005). Victor Papanek's (1972) *Design for the real world* brought in thoughts of designing for the poor in the Third World, disabled and elderly, and therefore became a manifest for leading figures in the Norwegian design community (Ask 2004).

Today the awareness about the user grows increasingly important. The emerging field of service design is understood by introducing design thinking to user centred service delivery. The development of rapid manufacturing also continues to change the industry particularly regarding flexibility in production systems and time to market (Killi 2005). This flexibility also allows for user involvement early in the product development process and opens up for customisation. In these emerging trends in the design community, the user takes an active role. Another way of seeing users would be to label them as 'skilled practitioners' (Kilbourn and Buur 2007). Some products may have a certain level of complexity; the user would not only be using the product, but also become an expert in its use. Medical equipment offers an example of this interaction.

The user as portrayed in Margolin's paper was 'active' in use of the product. The development within design has grown beyond this understanding of a user. Designers are indeed, as Margolin theorizes in the 1980s, designing for an active user. However, users are presently not only active in buying the product as the quote implies, but also active in designing the product or services.

In marketing the inclusion of consumers in product development has created the term 'prosumer,' which means the consumer as a producer. The word can be found in literature in the 1970s and seems to have become increasingly prevalent in use with the advent of the Internet. The advent of this new medium provides companies with the opportunity to interact with consumers about their products. The German sports equipment company Adidas has employed this method in allowing customers to make bespoke training shoes (Adidas 2008). The Finnish mobile phone manufacturer Nokia launched a service that allowed the consumers to design their own telephone handset in 2008 (T3 2008).

As Margolin suggested, the 'consumer' could be regarded as passive. This reflects a debate that has been important since the 1950s. In 1957 Vance Packard's book *The Hidden Persuaders* added to the debate. Companies were according to Packard seen as having a manipulative role towards consumers. In the new millennium, the discussion has been continued by Naomi Klein's *No Logo* (2001). She claimed that brands left people without choices. The solution she presented was to bring back people as citizens, rather than approach them as consumers.

In an article published in *Consumer Journal*, sociologist Douglas Holt presents an in-depth qualitative study under the title 'Why brands cause problems' (Holt 2002). In this, he was approaching the general debate about the passive consumer. According to Holt, the view of the consumer as a passive actor has been present in marketing literature since the inception of the profession. Today, Holt argues, marketing literature addresses consumers as active participants in the decision of which products to buy. These arguments were backed with qualitative interviews in North America. He argued that people knew the companies were offering them an identity and sought profit in return, but accepted this if the brands had

credibility. In present society, the company is, according to Holt, driven by a citizen-artist mentality. Now brands are part of the culture consumers define as important for themselves. Consumers play an active part in developing both the product and the brand. The consumer is not regarded as 'passive' but as an active interpreter of the brand. So, both design and marketing theories regard the user or the consumer as an active part in the product development process. In the next section three case studies will be presented in which users/-consumers can be seen as 'active.' I will then use the term end user when describing the user and the consumer.

The four stages of the product life cycle

In the following section four stages of the product life cycle in which end users are actively involved in the process will be presented. The stages discussed are product development, point of sale, use and the disposal of the product.

Stage 1: Product development - User and consumer involvement

In the Jordan, Stokke and Imsdal cases both designers and marketers involved end users in this stage of the product life cycle (see table 1). However, the aim and techniques used to involve them differed. Designers have a tradition of choosing qualitative approaches to learn about the user in the design process, while marketers come from a tradition where quantitative methods are common (Holm and Johansen 2005).

	Information	**Concept development**	**Development**	**Industrialisation**	**Evaluation**
Jordan Go! (designer)		Stories of users	Scenarios of users		
Jordan (company)		Ergonomic test	Internal test of use and liking	External test of strength in material	Quantitative tests
Jordan Individual (designer)	Ergonomic test				
Jordan (company)		Ergonomic test Liking	Internal test of use and liking	External test of strength in material Quantitative tests	Quantitative tests
Stokke (designer)		Collection of meanings			
Stokke (company)	Interview in shop User scenarios	Test of design concept Focus groups	Internal test of liking, strength	Internal test of use and liking Test of strength	Focus groups
Imsdal (designer)	Design trends User scenarios				
Imsdal (company)	Focus groups Quantitative tests		Focus groups		Focus groups Quantitative tests
			Quantitative tests Qualitative interview		

Table 1: Overview of designer and companies involvement of end user in different stages in the

product development process

The qualitative approach used by designers in these three cases was samples of information among friends and family, ergonomic study of the product in use, user scenarios and 'personas.' The latter two are techniques where a fictive user is constructed to support the designer in the product development process. Marketing professionals involved systematic data gathering as focus groups, quantitative questionnaires and in-depth interviews.

There were similar techniques used in the three cases, however the result of the studies of end users' reactions towards the new design implemented in the products varied in the three different cases. During the design of the Imsdal water bottle the marketers also involved a so-called design-test. New concepts for bottles were tested both qualitatively and quantitatively (Opinion 2005). In the Imsdal case the end users responses were used as a guiding line in the further development of the bottle design.

In the design of the Stokke Xplory pram, the radical new design was tested with a focus group (Stokke 2000). Testing the innovative design Xplory in the focus groups, the end users responded to the concept in less positive terms. The focus groups' reaction towards the innovative design was not favourable. The use of focus groups therefore created findings much in line with what the critics of focus groups anticipated. Zaltman (2003:121-122) has described how involving focus groups in innovation processes often prove to be useless. Despite this reaction towards the innovative concept, Stokke chose to go forward with the design. In the end the design proved to attract consumers in the market place, and the product was regarded as a successful change by Stokke (Landmark 2006). In the Stokke case, the end users' input was used to learn about their preferences for children's prams but not as guiding references for the development of the product (Hestad 2008:178).

There were similarities in the Jordan case study. In a test of Jordan Go! end users were positive to the concept which was the idea of the third tooth brush after lunch or on the way from lunch to a meeting. When the product entered the market end users did not see the concept as relevant, and Jordan changed both the product and the market communication (Hestad 2008:134). In another test, the end users responded that their desires for new toothbrush colours were black and white. When the product entered the market, the preferred colours turned out to be green and pink (Hestad 2008:178).

In the Jordan, case there was also a contest to let end users design their own graphic that was implemented in the toothbrush (see image 5), one of the end user designs was developed into a new collection of toothbrushes. This was possible because of new technology and development of production processes. The trend of involving end users in the process of developing products and customisation will most likely increase in the future because of the aforementioned rapid prototype techniques.

Image 5: Jordan Individual design competition (Credit: Jordan AS)

The difference between the three cases explored was the level of innovation required in each project and the strength of the brand. The brand awareness seemed to be relevant in the product development and the integration of end users affected the designers in the cases. In the Imsdal case consumers already had some ideas of what Imsdal was. In this case the designer had to be aware of this relationship before redesigning the bottle. The designers' role thus became a maintainer of the end users perception of the brand. In the Stokke case the designers' role was far more of an innovator and was less affected by the end user opinion on the product. In the Jordan case the designer role become in the design of the new toothbrush also as a facilitator of end users creativity.

Stage 2: Point of sale

End users are active at the point of purchase. This has been heavily explored in marketing theory, and a detailed elaboration on this falls outside the scope of this article. Nonetheless, activity at the point of purchase remains a topic that could deserve further attention in design. In sociology different user perspectives are raised such as a consumer driven by hedonistic motives, political motives or a post modern consumer chasing his/her own identity in a fragmented world (Blindheim et al. 2004). These different perspectives could be useful to widen the understanding of the user. In design literature, one finds a diverse view of how important the point of sale is, from 'sales are not a priority in design thinking' (Vihma 1995:42) to research if design line add values for consumers in the point of sale (Schoormans et al. 2007). In this article I chose to see the end user as active in purchasing the product, even though one may argue companies persuasive techniques affect consumers buying decision.

Stage 3: Use - the user that is promoting products and hindering sale

End users are also seen as an active in their use of the product (McCracken1988). They can be seen as active in promoting the product in their use. The well-established marketing technique 'word of mouth' received a new renaissance through Malcolm Gladwell's (2002) theory 'tipping point,' i.e. how a 'sticky message' could be spread as viruses. On the other hand, the end users also hinder sale by talking negatively about the product.

Both in the case of the Imsdal water bottle and the Stokke Xplory children's pram, the importance of marketing the product through end users was discussed. The vision Ringnes AS had for Imsdal when launching the bottle in 1994 was one of young girls walking in the main street of Oslo with Imsdal bottles in their hands (Michaelsen 2007). At that time there was little acceptance for buying bottled water in Norway. At the time of redesign of the bottle in 2006, the visibility of the bottle was an important part of the strategy of promoting the bottle, but was also seen as a key reason for end users to buy the bottle. The bottle has changed to become a marker of identity for young people (Opinion 2005).

The product Stokke Xplory broke with the established type form in the children market and thus the prams were more visible. When someone with the characteristic Xplory pram is observed, Stokke AS immediately gets some of the attention. Stokke AS' former project leader said: 'We wanted Xplory to catch people's eye, and wanted the pram to be visible on the street. This was in part because it would provide an automatic promotion of the product, and in part because parents [the end users] enjoy attention' (Refsum 2007). Visibility was increased though use by high-profile celebrities and projects like the British musician Seal (Gilbert 2005) and used in the American 'Sex in the City' film from 2008. Thus the children's product was not only a children's pram in urban environment, but it was the product that celebrities in an urban environment chose for their children.

As Jordan explored not all product seems to fit a word of mouth strategy. It proved difficult to involve users in promoting toothbrushes. Jordan tested a viral marketing campaign

where a blog was created, but with little success. One of the reasons could be that tooth-brushes are close to what is called a 'taboo product' – a product which consumers do not discuss. However, Forrester Research's Charlene Li and Josh Bernoff (2008) found that Procter & Gamble had success with their website beinggirl.com, in which teenage girls could discuss their use of tampons. According to the Forrester study beinggirl.com was four times as effective in reaching the target audiences as traditional tampon ads. Product mobility and taboo products are key areas for potential debate and research when it considering the involvement of end users in promoting the product (Molotch 2003).

The way end users use the product can also hinder sales. The product is used by someone with whom the brand will not be associated; in other cases, end users have a negative experience with the product and tell others. End users' experience of the product can alone be enough to not buy the product a second time. A study that was made available to this author had looked into a particular product: 'Although the [product] gets much praise for its appearance we get clear feedback about the drinking tap being too hard and not preferred at all. This can in itself be a reason not to buy' (Opinion 2005). In the Fast Moving Consumer Goods (FMCG) market this could slowly make the product unsalable. No matter how much the company advertises the product, the experience of the product is critical to make the consumer buy it the second time.

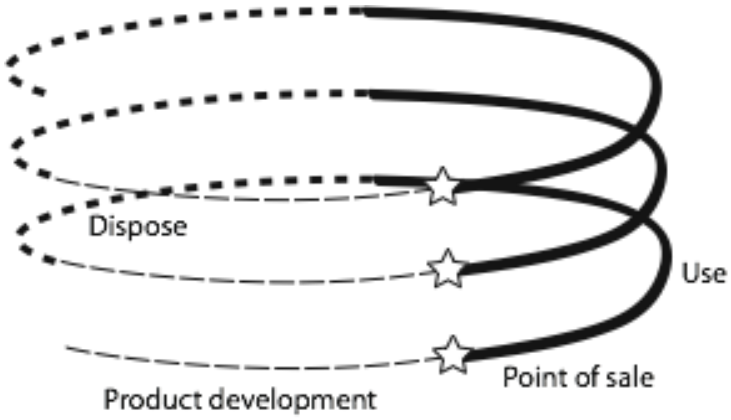
Stage 4: Disposal – product is still the brand after it is consumed

The user remains active also after the original product has been consumed or broken. In the bottled water industry there are several examples of how the consumer actively uses the product after the liquid is consumed. The bottle could be used as a container that the user can refill with water, and then reused several times. In some cases the bottles were even used so many times that the label fell of. Therefore Ringnes AS wanted the bottle to include an embedded logo in the bottle itself when it was redesigned. If the label fell of, the bottle still had an Imsdal logo to signal that it was an Imsdal bottle. The designer Yves Behar took this a stage further and developed the Y Water (Behar 2009). This is a bottle that can be connected with other bottles and shaped into sculptures to play with. This way of thinking is described as a cradle-to-cradle thinking, where the bottle transforms into a new object after its main purpose has been fulfilled.

One of the current trends in the design community in 2009 is sustainable design. In my three research cases it was interesting to observe that the idea of the consumer was strongest in the product where recycling was embedded in the product life cycle. The Imsdal bottle was the only one of the three that had been subjected to a regulatory scheme that handled disposal of the product. In Norway the disposal of products such as the Imsdal bottle has been regulated in different ways by the government. Interesting questions in the sustainable debate could then be: How could the example of Imsdal and the product life cycle inspire an holistic approach in other products? Could a focus on the active consumer also inspire to a holistic approach where all products had an afterlife following the disposal?

Active end user in a branded context

As the discussion shows, end users are involved in different stages in creating, promoting and even adding new meanings to the product. This involvement happens in a cultural context that also affects the process. All the case studies I explored were branded products. Especially in the Imsdal and Jordan case, the end users previous perception of the brand also played an important role in new product development. The use, and even the end users' disposal of the product, is thereby not the end of the product life cycle but could also be the start of new product development (see Model 1).



Model 1: A simplified model showing different stages in the product life cycle, and how these evolve as a result of market dynamic

End users are actively taking part in creating meaning to the product and the brand in various stages in the product life cycle. How they are involved varies from product to product. In the product development stage, the designer or the marketer is in charge of the process and invites end users to take an active part in designing and commenting on the new product. In the three other stages, the end user is either activated by him/herself or by invitation.

At the point of purchase, the consumer will make his or her own decision whether to buy the product or not, but the company will in different ways try to persuade the end users to buy their product instead of the competitors.' Society, represented by friends, family or colleagues, will also affect the purchasing behaviour (Hawkins 1995). Also, government may try to influence the buying process by regulation, and the media by making the public aware of certain issues.

The end users may be active in using the product in ways that the designer or marketer had not foreseen. In some cases there also seems to be unwanted end users for certain brands (Hestad and Keitch 2009). These can be end users with a strong identity that do not match the values of the brand. The brand would thus prefer to not be associated with these end users. To sum up, in every stage of the product life cycle end users are active in adding meaning to the product. This activity also gives the designer new roles in the product development process.

Design in a cultural context changed by end users

Today it appears that both marketers and designers involve end users in all stages of the product life cycle. New challenges emerge as consumers or users are active in their use and consumption of the product in ways that designers or others who work to strengthen the brand position had not foreseen when designing the product. This creates new challenges for product development.

The role of designers is affected by active end users that desire to become co-creators, co-promoters and even co-communicators of the product that is being designed. The designer will perhaps be challenged on the aesthetics of the product, how the product is used and what kind of product the consumer is actually purchasing. The role of the designer may even go from being the creator of the product, to becoming a facilitator for consumers' desire to customise the product. The designer as a brand maintainer and the designer as a facilitator are two roles that emerge as a result of an active consumer or user. Both of these roles need to be further explored in order to continue making design relevant in a commercial context. The traditional designer with a product to communicate a message, or a functional problem to solve for a defined user, will probably continue to exist. However, new roles for designers have emerged, and these seem to play a part of industrial designers' work today.

In the beginning of this article, I presented the quote from Victor Margolin in which he stated that there were two audiences for design, an active user and a passive consumer. It is three decades since Margolin presented this view on the user and consumer. Since then the user has not only become active in the way of choosing and using the product, but even active in designing, promoting and communicating the product. The product design process does not end when the single product is released on the market, nor when the product is disposed; the design process is a part of a wider cultural and historical context in which the end user plays a major role in creating and changing.

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[1] This discussion is based on the trial lecture I held at the Oslo School of Architecture and Design before defending my doctoral thesis in 2008.
[2] For a full discussion of the cases see Hestad (2008)