

Design and innovation strategies

One of the reasons that make scientific investigation of design a hard challenge for scholars of innovation management is that the definition of “design” is fluid and slippery. Although there are several interpretations of design (for a comprehensive analysis see Love 2000), one common thread of these definitions is that they tend to be as broad as possible. Apart from Simon’s general definition (“Design is the process by which we [devise] courses of action aimed at changing existing situations into preferred ones” - Simon, 1982, see also Boland 2004), this tendency is common also in definitions more targeted to product design, starting from that proposed in 1961 by Thomas Maldonado for the International Council of Societies of Industrial Design, where design is seen as the process that coordinates all factors contributing to a product, from its consumption (functional, symbolic and cultural factors) to its production and distribution (Maldonado 1991). A consequence of this attempt to make the concept general, is that it also becomes generic, so that one can hardly distinguish its peculiarity with other fields of investigation, which, as underlined by Maldonado himself, slows down scientific progress in the field (Maldonado 2000). Indeed interpretations of design often tend to be very close to “product development” (albeit with a more user centered focus, as supported by the studies on user-centered design cited above; see also Walsh 1996), and sometimes its interpretations are close to “market research”, or “creativity”, and even “branding” (DMJ 1998). The consequence is that many people, when asked to really think about the peculiarity of design, and to think about what really makes design different from other fields such as engineering, they think about the product form, which is spelled “aesthetic and style”. It is not our purpose here to enter into this debate, that is authoritatively developed by design scholars. However, we need a precise and clear-cutting definition that would allow us to create a connection between design and other existing theories of innovation management. And as we look for differences, our choice has been to adopt a definition that is somewhat narrower than what usually seen in management literature, but that actually highlights the peculiarity of design compared to other innovation fields. Following the approach of many design theorists, our approach is that design deals with the meanings that people give to products, and with the messages and product languages that one can devise to convey that meaning. In other words we adopt the definition proposed by Klaus Krippendorff on Design Issues in 1989 (Krippendorff 1989):

“The etymology of design goes back to the latin *de* + *signare* and means making something, distinguishing it by a sign, giving it significance, designating its relation to other things, owners, users or gods. Based on this original meaning, one could say: design is making sense (of things)”,

which reflects the archaic definition of the word “design” reported in dictionaries, where design means “to indicate with a distinctive mark, sign or name” (Merriam-Webster’s Collegiate Dictionary, 1993). The product style (considered as its mere aesthetic appearance) is but one of many ways a product may bring messages to the user. Apart from styling, what matters to the user, in addition to the functionality of a product, is its emotional and symbolic value, i.e. its meaning. If functionality aims at satisfying the utilitarian needs of the customer, the product meaning tickle her/his affective and socio-cultural needs. It proposes to users a system of values, a personality and identity, that may easily go beyond style. Designers give meaning to products by using a specific design language, that is the set of signs, symbols and icons (of which style is just an instance) that deliver the message.

The semantic dimension of design has been actually recognized and underlined also by several design scholars and theorists (Heskett 1990, Margolin and Buchanan, 1995, Cooper and Press, 1995, Petrowski 1996, Karjalainen, 2003, Friedman, 2003, Lloyd and Snelders, 2003, Bayazit 2004, Norman, 2004, Redstrom 2005). Research in marketing, consumer behavior and anthropology of consumption has also demonstrated that the affective/emotional and symbolic/socio-cultural dimension of consumption is as important as the utilitarian perspective of classic economic models, even for industrial clients (Douglas and Isher-wood, 1980; Csikszentmihalyi and Rochberg-Halton

1981; Fournier, 1991; Sheth et al. 1991; Kleine et al., 1993; Mano and Oliver, 1993; Brown, 1995; Du Gay 1997; Holt, 1997 and 2003; Bhat and Reddy, 1998; Schmitt 1999; Pham et al., 2001; Oppenheimer, 2005; Shu-pei, 2005).

The above definition allows us to link more precisely design with other theories of innovation (Garcia and Calantone, 2002), and to better point out its peculiar nature. Consider in particular the diagram in Figure 1. Building on the above discussion we may say that innovation may concern a product's functional utility, its meaning or both. And alike functional innovation may imply an incremental or radical improvement of technical performance, also innovation of the semantic dimension may be more or less radical. In particular, innovation of meanings is incremental when a product adopts a design language and delivers a message that is in line with the current evolution of socio-cultural models. Users would probably perceive this product as "fashionable" and maybe stylish as it conforms to existing definitions of beauty, i.e. with a style that leverages on accepted languages. However, innovation of meanings may also be radical, which happens when a product has a language and delivers a message that implies a significant reinterpretation of meanings.

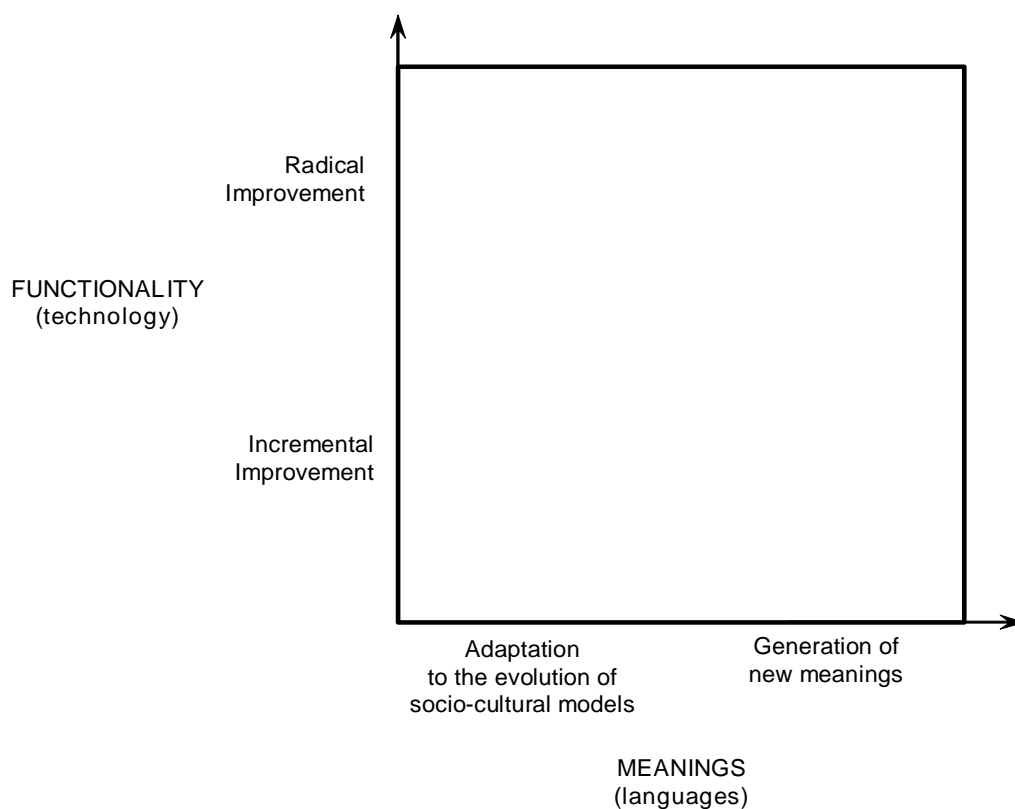


Figure 1. The dimensions of innovation (source: Verganti 2008).

For example, the Swatch, launched first in 1983 was a radical innovation of what a watch previously meant to people. As watches were considered to be jewels in the '50s and in the '60s, and moved to be considered time instruments in the '70s (with the advent of the Taiwanese quartz watch industry), the Swatch radically overturned watch's meanings into that of "fashion accessories". Easy to be said ... after they conceived it. But before them, no one thought that watches could ever achieve that meaning (Glasmeier 1991). The Swatch's design language, with its intensive use of plastic, colorful style and low price, helped to convey this new meaning. Nowadays Swatch launches into the market a couple of new collections every year. Each collection consists of

style and graphic changes that simply adapt its original meaning to evolutions in socio-cultural trends. Every Swatch collection may therefore be interpreted as an incremental innovation of meanings. Other well-known examples of radical innovations of meanings are the previously quoted Alessi's Family Follows Fiction products (that turned kitchenware from being simply functional into symbolic objects of irony and affection), or Bang & Olufsen's Beosound 4000 stereo released in 1972, which transformed music players from electronic devices into pieces of furniture (an overturn of meanings that was so radical that not even GE grasped it when Jacob Jensen presented them its first prototype before moving to Bang & Olufsen (Jensen 2005)) or the Apple I-Pod, whose success, largely acknowledged and debated, is not simply due to its stylish form (indeed, before the I-Pod, there were already several other competing MP3 players with a much more stylish language in line with the dominant design language at that time, i.e. the language of the Sony walkman). The I-pod instead has proposed a radical new language and also, and above all, a radical new meaning, implying a new experience limited not simply to listening music, but also to accessing music on the web through the I-tune website, financially supporting the music industry, organizing and accessing songs through novel interfaces, etc..

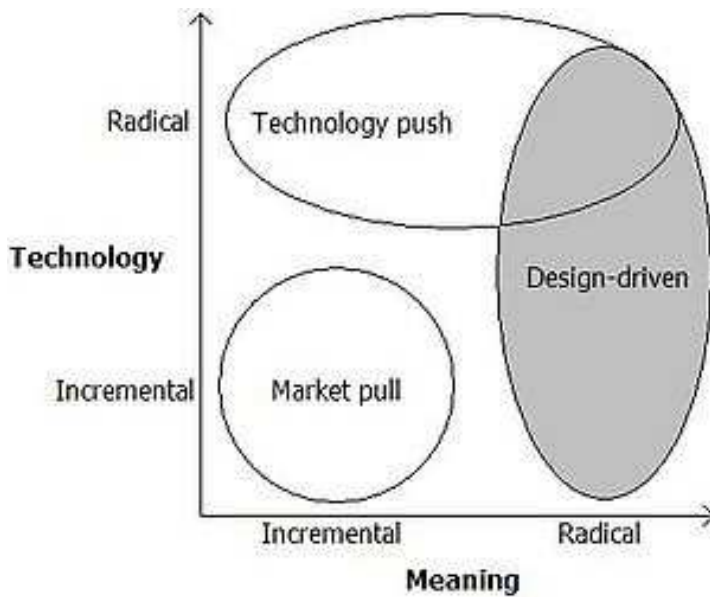
The area in the right hand side of Figure 1, i.e. where novelty of meaning and design language is radical, is what we call Design driven innovation.

Note that design driven innovation sometimes is not immediate. It takes time to diffuse and achieve acclaimed success. Users indeed need to understand the radically new language and message, find new connections to their socio-cultural context, explore new symbolic values and patterns of interaction with the product. In other words, similarly to radical technological innovations, that ask also for profound changes in the technological regimes (Latour 1987, Callon 1991, Bijker and Law 1994, Geels 2004), radical innovations of meaning ask for profound changes in the socio-cultural regimes. We are not talking of "fashionable" or stylish products here, but rather of products that may contribute to the definition of new aesthetic standards, maybe something that could become an icon in the future, definitely something that plays a major role in changing socio-cultural models. In other words design driven innovation may be considered as a manifestation of a "re-constructionist" (Kim and Mauborgne 2004 and 2005) or "social-constructionist" (Prahalad and Ramaswamy, 2000) view of the market, where the market is not "given" a priori (such as in the structural perspective, e.g. in Porter 1980) but is the result of an interaction between consumers and firms: needs (i.e., not only utilitarian needs but also symbolic end emotional meanings), are therefore co-created. Design driven innovation is not an answer to, but a dialogue with and a modification of the market. Successful Italian manufacturers in design-intensive industries have demonstrated unique capabilities to master radical innovation of meanings. Their innovation portfolio consists of several incremental projects coupled with a few strategic (and often successful) attempts to introduce breakthrough changes of product meanings. These breakthrough changes serve the purpose of exploring new routes, satisfying latent desires and aspirations, moving the frontier of design languages, setting new standards of interpretation, and eventually strengthening the brand value. Italian manufacturers therefore provide an interesting investigation ground to understand how design driven innovation may occur.

Looking closely at these firms, we may easily discover that they hardly apply ethnographic and user-centered methodologies and tools in their innovation process. Rather, when asked about how their firms investigate users needs, entrepreneurs of leading design-driven companies have a different patterns of answers (Verganti 2008):

"Market? What Market? We do not look at market needs. We make proposals to people" Ernesto Gismondi, Chairman of Artemide.

These considerations are mapped in our diagram on the dimensions of innovation, highlighting the major areas of action of the three modes of innovation (si veda la seguente Figura 2):



- design driven innovation, where innovation starts from the comprehension of subtle and unspoken dynamics in socio-cultural models and results in proposing radically new meanings and languages that often implies a change in socio-cultural regimes;
- market-pull innovation, where innovation starts from the analysis of user needs, and subsequently searches for the technologies and languages that can actually satisfy them. We include user-centered innovation as a declination of market-pull innovation, as they both start from users to directly or indirectly identify directions for innovation. Although the user centered approach is more advanced and sophisticated as its methodologies allow to better understand why and how people give meaning to existing things, which can lead to more innovative concepts compared to traditional market pull processes, it still operates within existing socio-cultural regimes;
- technology push innovation, that is the result of dynamics of technological research. The overlap between technology push and design driven innovation in the upper right corner of the diagram highlights that breakthrough technological changes are often associated by radical changes in product meanings, i.e. that shifts in technological paradigms are often coupled by shifts in socio-cultural regimes (see Geels 2004 for a very insightful analysis). For example, the introduction of quartz watches in the '70s was both a breakthrough change in technologies (the introduction of semiconductors) and in meanings (watches moved from being jewels to being instruments – some even had a small calculator as an additional feature!). And viceversa, radical innovations of meanings are often prompted by the availability or exploration of new technologies.