

Ph.D. Thesis Propositions

Enhancing Sustainable Innovation by Design
An Approach to the Co-creation of Economic, Social and Environmental Value

1. Competitive and sustainable business propositions cannot be generated by a single company. They are the outcome of a process of value co-creation that involves different stakeholders - including local actors and end-users - with various competencies and expertise.
2. Competitive and sustainable business propositions are rarely represented by mass-produced and stand-alone finished products. They are a combination of tangible and intangible elements that generate 'open' and 'flexible' *product-service systems*, which can grow over time.
3. New profitable business opportunities which contribute to the dematerialization of our current economic systems arise when companies focus on the question of how best they can meet people's needs and wants, rather than concentrate on the redesign of conventional products.
4. Aware of markets' - and technological - requirements, as well as sensitive to the emerging socio-cultural manifestations of people's needs, *design* can assume a strategic role in the business innovation process by bridging technological innovation with social innovation. It can facilitate the mix and match of multiple input needed to create *product-service systems*, which are able to satisfy - in a sustainable manner - the demand of an exponentially increasing population.
5. By bringing environmental and social parameters - and the 'voice' of the users - into the ideas and concepts creation phase, *design* can increase the chances for business to provide competitive, user-centred *product-service systems* with contained environmental impact.
6. Sustainable business innovation cannot only be based on eco-efficient practices and technological changes: these are both necessary but not sufficient conditions (UNEP, 2002).
7. 'Creativity' and 'entrepreneurialism' are fundamental elements in an economy in which managers must make decisions without having access to complete information; especially today, since the economic context is becoming increasingly 'chaotic' and difficult to predict (Peters, 2003).
8. The global competitiveness and the saturation of markets, the fragmentation and sophistication of consumption patterns, and the urgency of the environmental question are challenging linear value-chains and classical 'make / buy' business models to bring global propositions to local contexts (Normann and Ramirez, 1995).

9. New dynamics for value creation based on global-local partnerships, scalable technologies and alternative ways of consumption are setting the ground rules for the future development of a more 'human' capitalism. These dynamics enable a higher customisation of the offer, one that nurtures diversification and, therefore, marginalizes the possible negative effects of globalisation (Green, 2003/4).
10. Companies - that manage to combine in the innovation process a triple bottom line approach with an appropriate use of Information Communication Technology (ICT) and other advanced technologies - can discover new ways of doing business, and new business ideas, which are potentially more sustainable (Elkington, 2001).
11. One of the main sustainability challenges is the respect of 'diversity'. No doubts about it: around the world, similar electronic *product-service systems* have to deal with 'many' different electric plugs and network standards!