



Interpreting and envisioning – A hermeneutic framework to look at radical innovation of meanings

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ABSTRACT

The recent success of companies that compete through design has raised an interest on how to innovate the customer experience of a product or service. Even in industrial markets firms are increasingly moving beyond the improvement of functional performance, to address a deeper redefinition of the reason why their clients buy and use a product, what we call a “radical innovation of product meanings”. Whereas there is a wide body of literature about technological innovation, we still lack robust theoretical frameworks that explain how companies can successfully propose new experiences and new interpretations of what a product is meant for. The purpose of this article is to stimulate and support the development of studies on radical innovation of meaning by providing a new theoretical lens. We propose hermeneutics as a valuable perspective to investigate the radical innovation of product meanings. Differently than classic innovation theories, where innovation tends to be considered either as a process of problem solving or as a process of ideation, hermeneutics provides a framework to look at innovation as a process of *interpreting* (of developing meaningful scenarios rather than finding an optimal solution) and *envisioning* (of imagining experiences that are still not asked for, rather than answering to existing needs). We illustrate that, in this process, external networks have a central role as they feed a continuous debate about what is or is not meaningful. Hermeneutics, therefore, is useful to shed light on how external players may significantly affect the way a firm reframes its interpretation of the competitive context and gives meaning to things. The article is conceptual in nature, since it aims at providing a theoretical platform which other scholars may build on: the purpose is to provide an indication of a possible direction to spur a cumulative process of knowledge development, rather than a conclusion. Yet, we support our arguments for the use of hermeneutics in exploring the radical innovation of meaning with examples and cases from our preliminary analyses, mostly in the fields of robotics and healthcare.

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1. Introduction

Executives in the sector of industrial robotics share two assumptions. The first one is that their firms are in the business of efficiency. Robots are serious stuff, meant to increase productivity, not to amuse people. The second one is that robots need to keep distance from humans, due to their potential to severely harm people. Yet, in 2003 the German company KUKA Roboter GmbH, a major player in the robotic industry, released the Robocoaster – a revolutionary application of industrial robots that challenged those assumptions (see European Robotics Research Network, www.euron.org or Schaetzle, Preusche, & Hirzinger, 2009). This new product was not the result of pure internal strategic thinking; on the contrary, it took great inspiration from external influences. Namely, by the passion of a former, entrepreneurial

employee, in love with roller coasters and their constructions. What KUKA managed to do is to change the meaning of how a robot “should” be used, by listening to a new, yet well-known, familiar but still different voice – immersed into an external network. For, the Robocoaster is namely a robot used in amusement parks to provide a totally new experience to people willing to enjoy the thrills of a breath-taking ride. It consists of a robotic arm with two seats at its end to host people. During the ride the robotic arm lifts the passengers in the air, swirls, stops suddenly, turns them upside down and in many directions, with different speeds and dynamics, thanks to a practically unrestricted freedom of motion granted by its six axis of rotation and six degrees of freedom. The peculiarity of the Robocoaster is not only the unique combination of movements it can allow, but also the possibility for passengers to program their 90 second ride themselves. Before sitting into the Robocoaster, the passengers go through a software application in which they can select from various motion profiles and speeds, depending on their age and how brave they want to be (more than 1.4 million combinations are possible). They can design a gentle, easy-going ride, or opting for a

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totally wild experience, whirling them up, down and sideways through the air. From the first ten robots delivered to the Legoland amusement park in 2003, to the recent adoption in the “Harry Potter and the Forbidden Journey” ride in Universal’s Islands of Adventure theme park in Orlando, more than 200 Robocoasters have been sold, opening an unexpected application for an industry that has recently experienced a major turmoil due to the recession that hit major automotive clients (see Öberg & Verganti, *forthcoming*). The robotic application has been so successful that eventually it spanned off into a profitable company, the “Robocoaster Ltd”, founded by the entrepreneurial employee. And, according to the Robocoaster management, the sales render significant margins, about ten times of the margin of a traditional manufacturing robot. At first, an external observer looking at people whirled into a Robocoaster, would think that this is a great idea, and also quite trivial. It does not require revolutionary technology. Indeed, the Robocoaster is based on an adaptation of a standard heavy-duty robot of KUKA, the KR 500, which has the peculiarity of being capable of lifting 350 kg (two people plus the seat) and simultaneously having a long arm. The technology is therefore accessible to any manufacturer of industrial robots. Yet, after almost ten years, KUKA is still the only competitor in the field. Why did not other companies recognize (and still not recognize) this opportunity? The point is that even if the Robocoaster uses existing technology, it challenges the existing paradigmatic interpretation of what an industrial robot is. It is not used for improving efficiency, but for entertainment. It does not keep distance from humans, but, instead, it is the first passenger-carrying industrial robot (see for example *International Association of Amusement Parks and Attractions, 2003*). In other words, the Robocoaster is not just a creative idea that fits perfectly within what is meant as “business as usual”. It is a revolutionary change in what industrial robots are meant for. In other words, it is a “radical change in meaning”. This new meaning was not within the dominant assumptions of incumbents in the industry. It was only by listening to a different voice, playing in other fields totally external to the world of robotics, that KUKA grasped the value of this new meaning. Who could believe the love of amusement parks would lead Kuka in this direction?

The industry of industrial robots is punctuated by recurrent changes in the meaning of what a robot is and what clients are really searching for when they buy a robot. In an empirical study in the industry we have created a map of revolutionary cases within the field of robotics, from the 70s and up to today’s date (Öberg, 2012). This map was created through conducting workshops with managers within product management, innovation management, software engineering, corporate research and sales of companies in the industry and then verified through interviews with employees and external experts in the field. The map, for example, shows that in the early days of the industry, the main focus of manufacturers and clients was on the product (the hardware and its control system), and the purpose was to develop faster, more flexible and more precise robotic arms. In the early ‘80s ABB Robotics started to pioneer the development of “virtual robotics”, simulators that enable clients to visualize the operations of a robot in their plant before they actually buy and use the product. Through ABB’s “RobotStudio” simulator, clients may better predict how to effectively use a robot and design a better manufacturing process. The meaning therefore moved from selling an efficient robotic arm to selling knowledge on how to use it: even a slow robot may be more valuable than a faster one if it is used in an effective way. This type of innovation is so radical that even clients were not explicitly asking for it, and when it came out they were threatened instead of being thrilled. For example, car manufacturers have internal experts whose expertise is to understand how to use robots; these experts within the client organization interpreted the simulator as a threat to their expertise and therefore to their organizational power.

These kinds of breakthroughs in meanings occur in several markets, including business-to-business high-tech markets characterized

by intense engineering and science. One example is innovation in imaging devices for the healthcare industry. Clients, and in particular radiologists, usually ask for increasingly powerful devices, assuming that these can deliver a better quality of image and make examination throughput faster. The healthcare division of Philips however, has developed a new system, called Ambient Experience that takes a totally different direction. Rather than focusing solely on power and speed of the imaging device, this system focuses on the psychological status of the patient, with the assumption that a better and faster image is achieved also if the patient undergoing an examination is more relaxed. Philips, therefore has created a solution based on lighting, sound technologies, video projection and more, aimed at immersing the patient in a more relaxed environment and therefore enhance her experience before and during the examination. Also in this case, the new meaning did not come from within the imaging industry (quality of images does not depend on the power of the imaging device, but on the hospital ambient): Philips received crucial insights by listening to architects, interior designers, and child psychologists, who are outside of the typical ecosystem of imaging companies (for a deeper analysis of this case see Verganti, 2011).

These observations lead to the question in focus for this article: how may companies successfully manage the radical innovation of product meanings? Why are some companies effective in understanding the value of opportunities only when they are within the scope of the existing dominant meaning in an industry, whereas others manage to challenge the dominant assumptions and are capable to seize opportunities that are beyond the scope of what currently make sense? What is the role of external networks in this process of envisioning new meanings?

To clarify, when we mention “product meaning”, we relate to the purpose of a product or service as perceived by the user. It is about the purpose for *why* a product is used, not how it is used (the user interface), nor what the product consists of (its features).

Unfortunately, the subject of innovation of product meanings has largely been neglected in management studies. Whereas literature on management of innovation has deeply explored the antecedents of radical change of technologies, we still miss a deep investigation of the dynamics of radical change in meaning. A cause for this lack of investigation is that the nature of innovation of meaning is peculiar: it involves symbolic, emotional and intangible factors. Classical theories of innovation, conceived mainly for innovation of tangible factors, such as technology, utility, performance, and function, therefore wobble when used to investigate this type of innovation. New approaches and frameworks seem to be needed.

The purpose of this article is to support the development of studies on radical innovation of meaning by providing a new theoretical lens. Given the current state of development of the field, especially as far as industrial technology-intensive markets are concerned, our aim is not to deliver answers or empirical analysis, but rather, to propose a theoretical platform that can disentangle the basic complexities of the topic, and enable scholars to develop further research; an indication of a possible direction to spur a cumulative process of knowledge development, rather than a conclusion. In particular, we propose to use the theoretical lens of hermeneutics as a valuable approach to investigate the radical innovation of product meanings. Differently than established theories that often consider innovation as stemming from a process of *problem solving*, or from a process of *ideation*, hermeneutics provides a framework to look at innovation as a process of *interpreting and envisioning* (or generative interpretation). It therefore better suits the investigation of change in meaning, and has the potential to lead to complimentary explanations of why some companies are more effective in managing the radical innovation of meanings. In addition, hermeneutics offers an important angle to investigate the role of *networks* in the process of making sense of things, since external players may significantly affect the way firms reframe their interpretation of the meaning of products and services.

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