

## Creating Value and Innovation in Smes: The Critical Role of Tools for Design Management

<sup>1</sup>K. Ben Youssef, <sup>2</sup>M. Pellicelli, <sup>3</sup>A. Barison and <sup>4</sup>T. Leicht

<sup>1</sup>Department of Management, Universite Paris Nanterre, Paris, France

<sup>2</sup>Department of Economics and Management, University of Pavia, Pavia, Italy

<sup>3</sup>Emme Italia S.r.l., Padova, Italy

<sup>4</sup>School of Business, University of Leicester, Leicester, United Kingdom

---

**Abstract:** Design management has been widely recognised to play a key role in creating value and innovation. However, the empirical implementation of tools for design management as well as their impact on the customer's brand experience is still little investigated, especially in the case of Small and Medium-sized Enterprises (SMEs). This study introduces concepts relevant to customer involvement in the product design process and analyses the case of a pioneer Italian SME that produces luxury furniture. By referring to design workshops, it is identified that crowdsourcing, co-design, co-creation and crowdcrafting as concepts of design management play a critical role for the product innovation process of the company. A standardised questionnaire with workshop participants is used to provide insights into the impacts of these tools for design management on the customer experience. The findings suggest that the analysed approach satisfies customer interest and provides the opportunity to cooperate with other workshop participants in the product development in an inspiring learning atmosphere. Furthermore, workshop participants reported increased brand trust, willingness to purchase and loyalty towards the brand. The study concludes with discussing managerial implications and further research recommendations.

**Key words:** Co-creation, co-design, crowdcrafting, crowdsourcing, design management, open innovation, product innovation

---

### INTRODUCTION

Involving customers or prospects in strategic business activities is not a new phenomenon. The idea of involving consumers in the product development process stems from the concern that individual's views may not be sought sufficiently in the design process of firms, whereas designers may fail to address consumer needs. The lack of involvement in the design and evaluation stages of product development of individual users may contribute to the reluctance of parts of the population to engage with new products (Wilkinson and De Angeli, 2014).

Innovative brands and firms experience need to adopt specific innovation tools and processes, mostly through design management. Competitive firms therefore have the strategy to bring concepts of design management in different processes of the business organisation. However, design is still an unknown universe for SMEs (Mozota, 2003). For instance, the potential benefits of crowdsourcing in product design are well-documented

but little research exists on the barriers and opportunities of using crowdsourcing in new product development of SMEs (Qin *et al.*, 2016).

In addition to the lack of knowledge about how open innovation and design management is implemented at SMEs there is even less evidence on the performance impact of open innovation on SMEs (Radicic and Pugh, 2017). Design management initiatives may influence the customer's brand experience but as Bonfanti and Brunetti (2014) observe, the results of such initiatives are hardly assessable. A thorough understanding of the impacts of open innovation formats and design management tools on the customer experience may, however, provide very valuable insights for the strategic firm and brand management of any SME. As Gardien *et al.* (2016) suggest, businesses need to develop approaches, built on solid enablers and embedded in a collaborative, co-creative way of working.

The present study aims to analyse the empirical implementation of design management tools as well as their impact on the customer's brand experience at

SMEs. This study therefore, seeks to address the gap in the literature relating to the customer involvement during the open innovation process and New Product Development (NPD) at SMEs. Furthermore, this study aims to provide insights into the impacts of using such tools for customer experiences. The following research questions are being addressed:

- Why do SMEs introduce design management tools in the product development process?
- How do SMEs use these tools empirically?
- What are the impacts of using these tools for the customer experience?

The study starts with introducing relevant open innovation and design management concepts. Then, the case of Berto Salotti is analysed through a qualitative approach relying on in-depth interviews and the analysis of two reference workshops. The identified design management tools of Berto Salotti are then related to Cautela (2007)'s conceptual RACE (Research, analysis, conceptualization, execution) framework. In the last part of the study a standardised questionnaire is used to provide insights into the customer experience of workshop participants. The study concludes with discussing managerial implications and research recommendations.

**Literature review:** Modern firms are on the verge of important changes in the way they innovate (Buecheler *et al.*, 2010). Companies nowadays recognise that good ideas can arrive from outside the organisation and a more open model, called 'open innovation' is emerging (Chesbrough and Crowther, 2006). Chesbrough (2003a) coined this term to describe innovation processes in which firms interact with the environment, leading to a significant amount of external knowledge exploration and exploitation (Chesbrough, 2003a; Van de Vrande *et al.*, 2010; Casalegno *et al.*, 2017). The concept of open innovation redefines the boundaries between the firm and the environment, making the firm more porous (Chesbrough, 2003b). Laursen and Salter argue that "the network of relationships between the firm and its external environment can play an important role in shaping performance". Open innovation brought both scholars and practitioners together to rethink the design of innovation strategies in a networked world (Huizingh, 2011), emphasising that firms should be open to outside innovation (Rigby and Zook, 2002; Christensen *et al.*, 2005; Enkel *et al.*, 2009). When using open innovation approaches, organisations can capture value and better align themselves with changes of the business

environment (Teece *et al.*, 1997; Di Gangi and Wasko, 2009). A value-creation effect is supposed to result from involving external parties (e.g., suppliers, customers, competitors, consultants, research institutes and universities) in the innovation process (Bahemia and Squire, 2010, Giannopoulou *et al.*, 2011). Although, research focusing on the determinants of open innovation has somewhat neglected the role of human elements (Wynarczyk *et al.*, 2013; Ahn *et al.*, 2017), several contributions support the impact of open innovation on firm's innovativeness (Lichtenthaler, 2008; Lazzarotti *et al.*, 2010). Recent studies have demonstrated that firms can profit from user innovation and user communities in open innovation processes (Bilgram *et al.*, 2008; Lichtenthaler, 2011).

**Customer involvement in product development:**

Consumers are nowadays emancipated from passive consumption behaviour. Owing to the new forms of project sharing, horizontal relationships and deeper involvement of employees and consumers in business processes are creating a shared value network that inextricably links the actors of the processes to the company itself. Many firms collaborate with customers to develop technologies or products to gain credibility or to develop technology that could subsequently be used to satisfy other customers (Tidd *et al.*, 2001).

The literature has emphasised that users take an important role in the development of new products (Piller and Walcher, 2006). Gassmann *et al.* (2010) underline that research into the 'user perspective' started with lead users' involvement in the innovation process. End users are considered central in the open innovation process and some research on user innovation has shown that some of the most lucrative and novel innovations have been developed by users (Hippel, 1988). Consumers are not just passive adopters of innovations but they may rather develop their own innovations (Hippel, 1998, 2002, 2005; Hippel and Katz, 2002; Luthje *et al.*, 2005; Di Gangi and Wasko, 2009).

Collaborating with customers from the early research stages to commercialisation can be beneficial (Bretschneider *et al.*, 2008; Giannopoulou *et al.*, 2011). Firms need to give consumers incentives (Fuller *et al.*, 2008), build feelings, enhance brand affinity and give them space for creativity (Bughin *et al.*, 2008). Firms may benefit from their customer's ideas and innovations by proactive market research, providing tools to experiment with and develop products (Van de Vrande *et al.*, 2009).

The usage of new technologies and the increasing digital literacy allows cooperation activities to become

more and more intuitive, allowing firms to involve skilled consumers in their product conceptualisation processes. Moreover, innovation processes become available for the whole community thanks to shared know-how.

**Design management:** Design management aims to ensure that product development takes place within a clear and consistent strategy (Bargellini, 2014). Miller and Moultrie (2013) argue that it seeks to manage the design process (Sebastian, 2005) in order to deliver timely and cost-efficient design results (Cooper and Junginger, 2011), generating value for the firm (Chiva and Alegre, 2009).

Design management has been described from different perspectives including definitions and goals, organisational level and people deploying design (Gorb, 1990a; Acklin, 2013). Scientific contributions in this area date back to the 1960, 1970 and 1980's (Farr, 1965; Topalian, 1979; Kotler and Rath, 1984; Gorb, 1990b), although, only in recent times, it was recognised as a distinctive element of the innovation and value creation process thanks to the seminal research of Martin (2009).

However, design is still an unknown universe for SMEs (Mozota, 2003). For instance, the benefits of crowdsourcing in product design are well explored but there is not much evidence on the barriers and opportunities of using crowdsourcing in for product development cycles of SMEs (Qin *et al.*, 2016). The management of such complex approaches may be difficult, in particular for SMEs. Innovation requires improvisation and does not aim at following the established rules of the game (Schrage, 1999) which makes it difficult to analyse the performance impact of such innovation formats in the case of SMEs (Radicic and Pugh, 2017). It can be expected that the effects human elements on the determinants of innovative product development approaches through design management are particularly strong for SMEs. Small companies are more likely to lack human resources and thus depend more on upon strategic leadership than large firms. This means that CEOs are more frequently involved in the everyday business in SMEs (Lubatkin *et al.*, 2006). However, a better understanding of the empirical implementation of design management tools by SMEs and their impact on the customer's brand experience seems to be necessary in order to develop a more comprehensive management of customer involvement in the product innovation processes of SMEs.

## **MATERIALS AND METHODS**

This study adopts a case study approach to answer the research questions. Case studies are considered an

empirical method in order to investigate a contemporary phenomenon within real life context and they may contribute to theory development (Flyvbjerg, 2006). For the purpose of this study, an exploratory approach has been adopted as the analysis seeks to provide evidence on how the company Berto Salotti, a pioneer Italian SME that produces luxury furniture, uses tools for design management and how they affect the general customer experience.

The case of Berto Salotti was in this regard deemed as exemplary (Bonfanti and Brunetti, 2016). This case gives insight into critical management experiences, such as the generational transition in business management and the emancipation of businesses in particular in SMEs, contextualised within a historic furniture production district, namely that of the furniture production of Brianza in the Lombardy Region, in Italy. Bonfanti and Brunetti (2014, 2016) already provided insights into the design workshop concepts of Berto Salotti, arguing that its business concept includes knowledge and experience economy and that crowdsourcing plays an important role for the product creation process. However, as Bonfanti and Brunetti (2016) observe, "the initiative is still in its starting phase and its results are hardly assessable". This study therefore, extends this analysis in two important ways: by providing a more holistic analysis and contextualisation of tools for design management in the broader open innovation context and by providing insights into the impacts of Berto Salotti's workshops on the customer experience.

In order to analyse how the company makes use of design management tools, a qualitative approach was used. According to Creswell (2012), qualitative research is an inquiry process for understanding certain empirical phenomena. It is based on methodological approaches of inquiry that explore a social or human problem. Cases studies can rely on several data collection methods such as interviews, written sources and primary data (Yin, 2003). The qualitative approach applied in this study was first based on interviews with Berto Salotti's CEO as well as the brand marketing director (Table 1). An inductive approach was used analyzing the interview responses. Inductive approaches are evident in several types of qualitative research and are intended to aid an understanding of meaning in complex data through the identification of summary themes or categories from the raw data for the purpose of data reduction (Strauss and Corbin, 1990).

**Case studies of "#DivanoxManagua" and "#Sofa4Manhattan":** Berto Salotti company implemented design management concepts to increment

**Table 1: Interview guide (own elaboration)**

Question No.	Questions
1	Who decided to implement new design management tools in the innovation process?
2	When did the company implement the new tools in the innovation process and why?
3	Do you believe that your customers consider it important that a company actively works with these new tools?
4	Do your customers know about the company's new tools?
5	Do you believe that your employees are affected by the company's new tools?
6	How does the company work with these new tools?
7	Which design management tools have been implemented?
8	Which design management tool does the company plan to implement in the near future?
9	In what ways have these new tools and related activities affected your daily work?
10	Does the company communicate the use of these new design management tools to the public, customers and employees?
11	Which methods are used to communicate these new tools?
12	To what extent does the company communicate these new design management tools?
13	Why does the company communicate these new design management tools?
14	Do you believe that the company's new design management tools activities can affect the company's reputation? In what way?
15	Approximately how much money has the company invested in digital marketing to promote these new design management tools?
16	Do you believe that new design management tools can be compared to traditional design management tools?
17	Do you believe that companies working with these new design management tools can increase their sales?

its competitiveness through strategies aimed at developing the latent potential of both the enterprise and the territory. The brand has progressively acquired exemplary characteristics that represent both the tradition of furniture craftsmanship which rooted in the territories of Brianza and of “Made in Italy” in general and the characteristics of a European SME. Furthermore, through the use of new design management tools, Berto Salotti is supposed to strengthen the perception of the brand in order to boost brand awareness. The company especially, invested in design-driven innovation and internationalisation projects in which novelty of message and design language is significant and prevalent compared to novelty of functionality and technology (Verganti, 2009).

In addition to the analysis of the interviews, product design workshops were analysed to substantiate the findings. The two projects “#DivanoxManagua” and “#Sofa4Manhattan” were considered as cases as they use a global system of strategic design management through specific activities that summarise values such as participation, storytelling, Corporate Social Responsibility (CSR) and rediscovery of tradition and craftsmanship that are extremely significant for the market. According to Yin (2003), case studies can rely on several data collection methods which makes them suitable for analysing the case of Berto Salotti as interviews, written sources and primary data were used.

**Case study 1; “#DivanoxManagua”:** The project “#DivanoxManagua” was initiated in early 2013 and had the objective to construct a couch. Six open working sessions were held with the following types of participants: craftsmen of the company, students of a school for upholsterers, upholsterers of other companies,

designers, entrepreneurs, journalists, customers, consultants and marketers from related fields of research. The participants were aged between 18 and 70 years and included mainly male participants (Bonfanti and Brunetti, 2016). “#DivanoxManagua” was co-created by 600 hands who attended the open work sessions in meda, Rome and at the design week in milan. With the assistance of Berto’s master craftsmen, every participant developed a piece of the final product (Fig. 1).

The project had a solidarity purpose to be developed in Italy, in partnership with Terre des Hommes Italia and AFOL (the agency for training and career orientation). “#DivanoxManagua” is designed to collect funds for a carpentry school at Mercado Mayoreo in Managua in Nicaragua. The project emphasised CSR involvement linked with Socially Responsible Products (SRP) in line with Berto Salotti’s brand positioning and value creation ideas (these concepts are argued more deeply by Youssef *et al.* (2017).

The first sofa that was realised during the sessions was sold through a charity auction and the earnings were used to fund the school for joiners of Mercado Mayoreo Managua. The produced couch has been integrated as item in the product portfolio of the company. A share of the revenues of this product item is still invested in the school for joiners of Managua. The original purpose of “#DivanoxManagua” was neither charity, nor production mode revolution. Instead, the project setup was the result of a lack of qualified upholstery professionals (Bonfanti and Brunetti, 2016).

The project was born out of the will of valorising craftsmanship in particular for young people who are often insufficiently informed about the actual value of Italian manufacturing in the global economy. With his design workshops, Berto Salotti intended to show the



Fig. 1: a-d) Co-creation innovation process (<http://www.bertosalotti.fr/design-apart-fr.html>)

quantity and quality of labour required for the manufacture of his products. Unravelling the operations that lead to a sofa would allow participants to understand the human and economic value contained in this research (Bonfanti and Brunetti, 2016).

The initiative is promoted through the website, the company's blog and social networks. These media were however not only used after the success of the project they were designed as an element of the project, since, the very beginning.

**Case study 2: “#Sofa4Manhattan”:** The project “#Sofa4Manhattan” involved as well new design management tools with business and internationalisation purposes. The project “#Sofa4Manhattan” was initiated in 2014. 10 designers, aged between 25 and 50 years participated in the first session. Almost half of them were men. The workshop was organised at the New York loft of Design-Apart and the participants came from different parts of the world. The design and the realisation of the product (i.e., sofa) were therefore mainly done in New York City (Bonfanti and Brunetti, 2016), although, “#Sofa4Manhattan” was prototyped in Brianza.

Three design ideas were submitted and then selected by Berto Salotti's staff. A prototype was built by the craftsmen in Berto's workshop (Fig. 2). The co-creation process allowed for showing the participants the prototype building stages that the designers had drafted



Fig. 2: Co-creation for “#Sofa4Manhattan (<http://www.bertosofas.co.uk/sofa4manhattan-en.html>)

during the first stage with the development of the project. Besides the participation of Berto's CEO and the master craftsman, designers, product managers and manhattan citizens were invited. The crowdcrafting session was then held with designers, architects, customers and curious citizens coming from New York. The crowdcrafting idea behind “#Sofa4Manhattan” has pushed forward the development of “#DivanoxManagua”. The latter does not seek to enhance the image of the upholsterer but rather to share the design and manufacture of a product among experts and conventional consumers. In the workshop, customers have been involved in the creation of a sofa and have experienced the energy, ideas, knowledge and culture of the area in which the product was

designed. The “#DivanoxManagua” project had the primary purpose to fix a lack of skilled resources whereas the “#Sofa4Manhattan” project seeks to establish a conversation or exchange between Berto Salotti and potential customers and the inhabitants of a certain territory (Bonfanti and Brunetti, 2016). The awareness of this project has been considerable also at an international level. The “#Sofa4Manhattan” project is an example of recent innovation ideas whereas its impacts on the processes and the performances of the company require further examination. This project is representative of a new innovation spirit and it is certainly a strategic choice for the brand development of the company.

## RESULTS AND DISCUSSION

**Synthesis:** Berto Salotti’s collective approach for the development of the “#DivanoxManagua” and “#Sofa4Manhattan” projects involve innovative tools for design management. “#DivanoxManagua” and “#Sofa4Manhattan” highlight their belonging to a shared strategic design management project. Both projects, though, strategically underline the craftsmanship vocation of the brand, the link to the tradition and to the territory, the valorisation of the industrial know-how of Brianza and the marked vocation for design and “Made in Italy”. From a tactical point of view, “#DivanoxManagua”, thanks to its strong ethical and social character is more aimed at being an instrument of empathy with the market, whilst the second project “#Sofa4Manhattan” aims to be an internationalization tool. In both cases, the whole project was communicated through conventional platforms (e.g., specialised press, trade fairs) but mainly by the means of storytelling via the corporate blog and social networks that are innovative for SMEs. Furthermore, it is innovative that Berto Salotti as a SME uses a participatory approach to promote its traditional know-how combined with luxury designer products.

The projects point out that Berto Salotti’s product innovation concept relies on collective creation and crafting, enabling customer and prospects to participate in the product innovation process. More in detail, the open innovation approach of the company can be categorised into four major design management concepts: crowdsourcing, co-design, co-creation and crowdcrafting. The analysis of the interview responses and workshops suggests that it significantly capitalises on these approaches.

**Crowdsourcing:** Crowdsourcing which is a combination of the terms “crowd” and “outsourcing” (Poetz and Schreier, 2012) is the increasingly widespread procedure

of turning to the “crowd” in order to find solutions to problems of various types. The definition of outsourcing (Van Mieghem, 1999) identify the decision by which one or more processes or activities necessary to obtain a product or a component, even an organizational function originally undertaken in-house by a certain organization are regularly entrusted by a firm to an outside organization, the outsourcer (supplier or provider) who carries out the activity and sells the results to the firm (Pellicelli, 2009a, b; Colombo and Pellicelli, 2013).

The term was first used by Howe (2006a-c) in an article in the magazine *Wired* in June 2006, entitled “The Rise of Crowdsourcing”. It was defined as “the act of taking a job traditionally performed by a designated agent (usually an employee) and outsourcing it to an undefined, generally large group of people in the form of an open call”.

In Berto Salotti’s product innovation strategy, crowdsourcing takes places at the ideation stage of new product development. The two workshops “#DivanoxManagua” and “#Sofa4Manhattan” demonstrate that Berto Salotti calls the crowd outside its company in order to innovate on behalf of the brand but also in order to give them voice in the product design process. The involvement of workers from outside the company shows that parts of the product development have been outsourced. Berto Salotti is in this regard an example highlighting the potential of outsourcing core competencies for product innovation. Qin *et al.* (2016) for instance find that a relatively high number of SME expressed their interest in the use of crowdsourcing as approach toward innovation but many of them have not yet applied it in their business practice. For Berto Salotti, the engagement in crowdsourcing was a strategic choice that we made to develop brand awareness and image. As a SME operating in the luxury furniture sector, Berto Salotti succeeded in this way to create a distinct brand image by trying this new kind of open innovation with social impact.

The literature suggests that firms can benefit from crowdsourcing and the access to specialised resources, by the novelty, speed and cost effectiveness of the solutions identified and by retaining direct contact with their customers and better market coverage in the changing markets (Busarovs, 2011; IS Shapovalova *et al.*, 2015; Maiolini and Naggi, 2011; Poetz *et al.*, 2012; Tran *et al.*, 2012; Vladislavlevna and Alekseevich, 2015). For SMEs, crowdsourcing enables the scaling-up of design and manufacturing operations through a handful of employees. Crowdsourcing introduces a step change in the new product development process and technology and can ultimately improve design performance and quality (Maiolini and Naggi, 2011; Qin *et al.*, 2016). Berto

Salotti succeeded in this regard to create such a dynamic improvement of the innovation process by scaling-up the social value of his products.

**Co-design:** Co-design can be described as participatory design practice based on User-Centered Design (UCD) (Howell, 2008). According to Wu (2010), “co-design is the process of involving consumers in co-creating a product which combines individual consumer’s specifications with a company’s pre-designed modules”. The co-design approach allows individual customers to customise a product to meet their needs more precisely while at the same time allowing mass-production efficiencies (Wu, 2010).

Berto Salotti’s product innovation cycle is affected by co-design principles as it involves brand users or customers (whether they will be responsible for buying the product or simply using it) to create market-driven products that increasingly fuel customer demand, user adoption, satisfaction and last but not least, product profitability. Berto Salotti’s co-design concept integrates seamlessly with strategic and tactical market-driven product management practices and incorporates research and testing to understand a product’s relevance and to analyse its potential market acceptance.

In general, two types of co-design may be distinguished: Horizontal and vertical. Horizontal co-design involves working together with partners in the same organisation such as R&D, production and marketing departments. At the heart of vertical co-design is engaging with end users and customers (Steen *et al.*, 2011). Berto Salotti’s approach is on the one hand based on vertical co-design as end users participate in the design process. On the other hand, other departments of Berto Salotti (e.g., marketing, architects, etc.) are also involved in the co-design process, so there is also some form of horizontal co-design. The case of Berto Salotti suggests in this regard that SMEs may be likely to adopt both vertical and horizontal co-design due to the relatively small size of the company and its business units.

**Co-creation:** An increasing number of companies engage and involve their customers in the co-creation of their products. In this new business model, consumers become co-designer, marketer and seller and their creativity, devotion and interactions drive the future orientation of businesses (Wu, 2010). Prahalad and Krishnan (2008) emphasise that firms are required to interact with consumers to harness their innovation potential and together deliver personalised experiences through co-creation in order to remain profitable or develop competitive advantages. Co-creation can be considered as interactive dialogue between (a group of) firms and

(a community of) consumers with different degrees of interaction and the goal of jointly developing the value of the offerings to both the firms and the consumers. According to Prahalad and Ramaswamy (2004), co-creation has to do with joint creation of value by both the company and the customer. It involves creating an experience environment in which consumers can have active dialogue and integration for co-constructing personalised touch. Products may remain the same but customers are enabled to construct different experiences. Vargo and Lusch (2004, 2008) argue that all types of value creation are somewhat co-creational what is correlated with a fundamental cornerstone of the service perspective for marketing SDL (Service-Dominant Logic).

Berto Salotti’s approach towards co-creation allows customer to add their individual touch to the products that were developed during the workshops. The co-creation experience of the two reference workshops gave prospects and customers the unique opportunity to create parts of a high quality design furniture with their own hands. The advantages of this may indeed be that other brands are not likely to give people from outside the company such a degree of involvement.

**Crowdcrafting:** Thanks to the recent digital progress, people are nowadays provided with the tools to quit their role as receptive consumers as they are enabled to create media, software, hardware and many other kinds of items on their own. The concept of crowdcrafting affects the active participation of an unselected or elected group of users in a research, even handwork which may share and thereafter actuate an idea. Crowdcrafting enables to create and run projects where volunteers assist with image classification, transcription and more (Anonymous, 2011). Crowdcrafting can be defined as framework for developing and deploying crowdsourcing and micro-tasking apps through a platform. This platform can enable people to create and run projects that utilise online assistance in performing tasks that require human cognition. Crowdcrafting may therefore help researchers, producers and developers to create projects where anyone around the world with some time, interest and an Internet connection can contribute.

The crowdcrafting approach of Berto Salotti is based on the premise that competences in various industry-related fields from economic sciences to engineering from handy-crafters to industrial applications cannot be unstructured or un-based. Yet such requisites for competencies are sometimes difficult as people might find hitches for having at disposal, in a certain time and given space, the skills they need for pursuing practically their ideas. The availability of an extended communication network allows people to gather in a grid the competences they need, still having the possibility to filter them from

the beginning, either by direct knowledge or by guaranteed groups such as alliances, professionals, quality driven associations of companies and the like.

The company which was initially a traditional company specialised on tailored sofas, established an innovative product invention idea open to anybody keen to craft. For Berto Salotti, crowdcrafting was adopted for different purposes. First of all, good perception of the company’s products in the network (with strong connections with users of social media) was a reason. Emphasis on the values of cooperation and socializing among individuals was also one of the strategic brand targets. This also affected an extension of the project for the whole year thanks to the cooperation and the revenues of product placement and cross-media usage for developing the project. Finally, crowdcrafting had the purpose to produce branded content with a greater appeal (with concepts that are viewable in the network, generating consumer communication from the bottom).

**Contextualisation within Cautela (2007)’s RACE Model:**

The RACE (Research, analysis, conceptualisation, execution) model by Cautela (2007) provides a framework for design management concepts. For the case of Berto Salotti this model was used to interpret and contextualise the process of open innovation and the introduced design management tools. Cautela (2007)’s framework carry out

a double-entry matrix that intersects the nature of the design which can take an orientation more closely linked to abstraction, elaboration and “treatment” of knowledge (Cautela *et al.*, 2012).

The RACE Model has been chosen to contextualise the findings of this study as it was already claimed to make the basic processes of design thinking comprehensible (Celaschi and Deserti, 2007; Brown, 2009). According to this model, design management projects can be clustered into four major activities: research which is a process designed to bring out the inputs and basic assumptions of the project with ethnographic research, blue sky research and trend grasping research as tools to acquire knowledge; analysis which aims to organise what research has produced in terms of raw material using knowledge repository, benchmarking, lead-user analysis, scenario building, visioning aided by cards and system maps as methods to provide insights; Conceptualisation which is the process seeking to synthesise the results of the analysis by using design workshops, design competition and mock-ups as tools and execution which is the final development activity of a project at the intersection between the to-do dimension and the materialisation. The specific tools are Quality Function Deployment (QFD), rapid prototyping, beta trials, heuristic evaluation and human-computer interaction (Fig. 3).

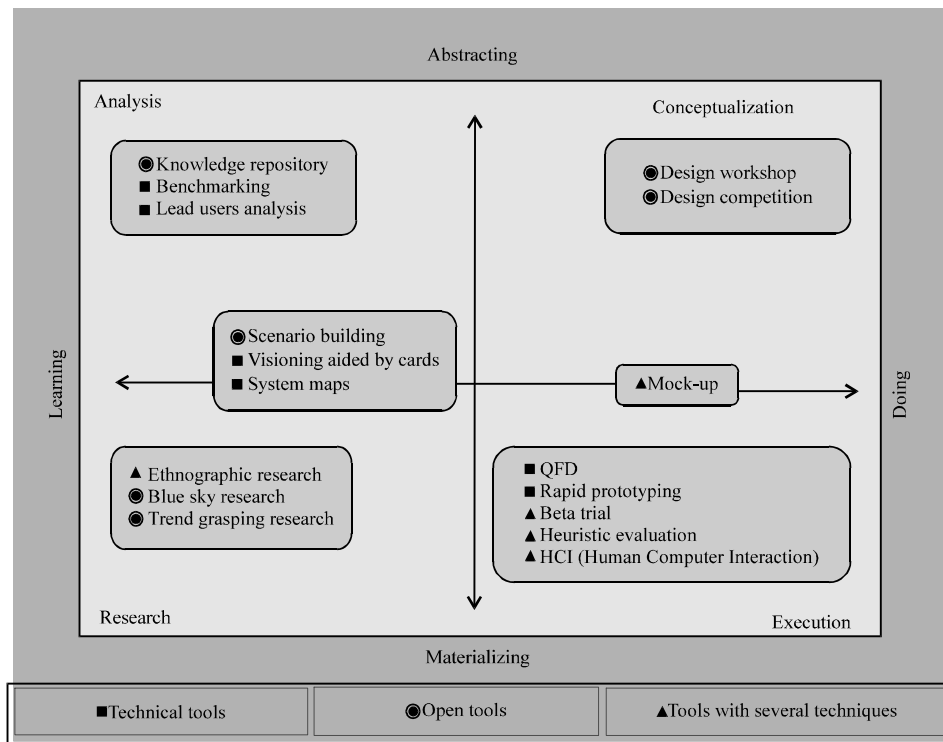


Fig. 3: The RACE Model (Cautela, 2007; Cautela *et al.*, 2012)



In the case of Berto Salotti, research is done through crowdsourcing activities. The drafting of the project involves different professional characters and skills. Targeted crowdsourcing allows for collecting useful information for the development of the project. Analysis is carried out through co-design activities. The information analysis and the selection of the project ideas involve different competences and artisan knowledge. Conceptualisation is concretized through co-creation activities. The final product concept is the result of the collaboration and participation of the whole project team whereas concept drafting took place by involving the hands of many participants. Execution is realised through crowdrafting. The final production of the prototype involves the whole project team and all the participants in the workshop.

**Extension of the RACE Model:** The case of Berto Salotti suggests to extend model Cautela (2007)'s. The modified RACE Model presented is useful to illustrate a 360° perspective on the product innovation process by Berto Salotti. It starts with the research based on collective intelligence. Co-design is developed basing it on an analysis of external and internal factors. Finally crafting a product collectively, co-creation helps to execute the project practically. The tools integrated into the model may be considered as meta elements in order to link the macro processes with practical activities (Fig. 4).

The extended model shows that design management makes cooperation between different corporate resources a decisive element for competitiveness, involving suppliers, customers, markets, communities and the general environment of innovation processes. Prospects, consumers or customers play a critical role in such approaches to product innovation, however very little is known about the outcomes or performance of brands that adopt such innovative design management tools (Bonfanti and Brunetti, 2014; 2016; Radicic and Pugh, 2017).

Therefore, the question about how workshop participants perceived and experienced the crowd-based design management concepts becomes important. As it was shown beforehand there is some fragmented evidence in the literature that the concepts of crowdsourcing, co-design, co-creation and crowdrafting can be beneficial for companies. However, there is a lack of evidence on how such tools impact the workshop participant's brand experience, especially in the case of SME. For a more comprehensive management of brands, it is however necessary to understand how these tools for design management are perceived by consumers and whether they fulfill the strategic purposes.

The relevance of tools for design management for the general customer experience in order to provide insights into the influence of the tools on the brand experience, a standardised survey with predefined answer options was

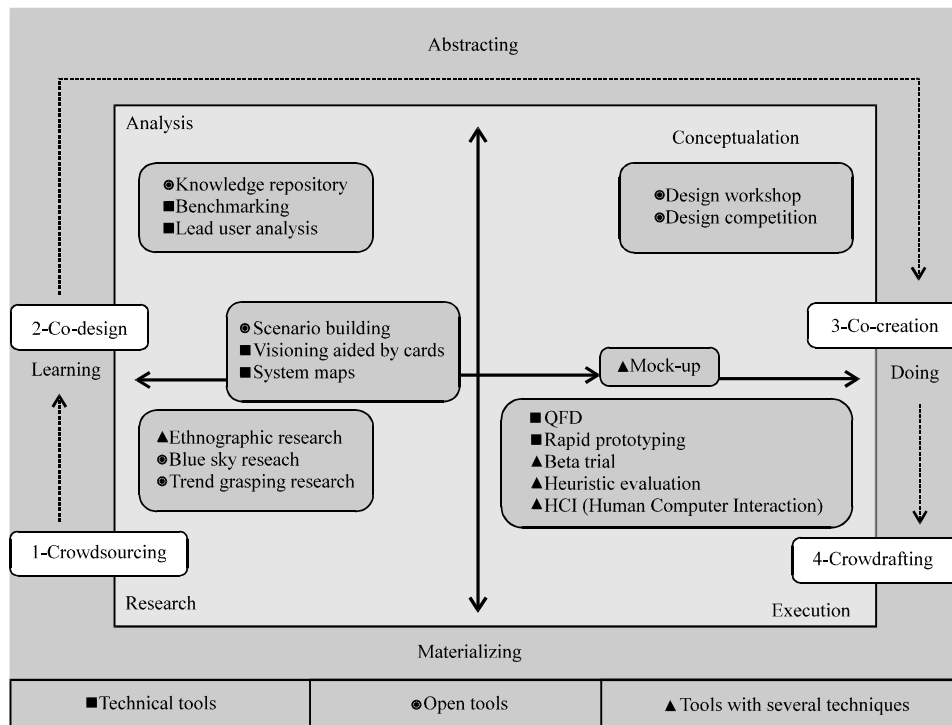


Fig. 4: The RACE Model (Cautela *et al.*, 2011)

conducted with the workshop participants of “#DivanoxManagua” and “#Sofa4Manhattan” (n. 31). It was shown that individual interest was by almost 75% of the respondents rated as the most important reason for participating in the workshop. The most important feelings that the workshop evoked were interest (41%), inspiration (26%) and happiness (22%). One third of the participants rated the cooperation between the participants as most impressive experience during the workshop while knowledge transfer between participants, overall atmosphere and the fact that people personally assisted in the product creation process were also important experiences.

For the last part of the survey, a set of 15 intuitively created items anchored on a 5-point likert scale was used for further exploring the role that Berto Salotti's design management tools play for concepts such as customer experience and brand equity.

It was found that more than 85% of the participants claimed to be a creative person while more than 75% of the respondents like to solve problems jointly with other persons. The 85% of the participants simply or totally agreed that creating products together is better than doing, so, individually while almost the same percentage held the view that creating new products together is an excellent way to innovate. With regard to the workshop experience, 89% of the participants claimed that they learned a lot in the workshop while 85% felt satisfied with the workshop. The 96% of the surveyed persons agreed that they would like to participate in further workshops and more than 85% of the respondents would recommend the workshop experience to their family and friends.

In terms of brand equity, 93% of the workshop participants agreed that the workshop experience strengthened their brand loyalty toward Berto Salotti. 92.31% of the surveyed persons claimed to be willing to purchase more products from the company after having participated which was validated in a question before asking if people were its customers before and after the workshop. For 96% of the surveyed persons, the workshops increased trust toward the brand Berto Salotti and more than 90% simply or even totally agreed that the company provides with its workshops something unique. For 93% of the respondents, the workshops were very inspiring. Finally, more than 90% claimed that the company distinguishes itself thanks to its workshops from other furniture brands. These findings provide evidence on a relatively high workshop satisfaction. This suggests that an exclusive brand experience was created by the aims of the workshops. This study therefore,

supports the idea that the design management concept of Berto Salotti can be an effective instrument for boosting brand value and brand equity through new product innovation approaches.

The findings of the survey suggest a positive impact of the design workshops that Berto Salotti organises in order to innovate its products. With regard to the suggested extension of Cautela (2007)'s Model, the new model may need to be tested in other contexts as well. The extended model might allow practitioners and strategic managers of SME to better contextualise the different design management tools within the general product innovation process. Previous research suggests that the empirical implementation of crowdsourcing, co-design, co-creation and crowdcrafting is especially in the case of SME still not well understood. Qin *et al.* (2016) for instance find that a relatively high number of SME expressed their interest in the use of crowdsourcing as approach toward innovation but many of them may need to acquire more knowledge about its empirical implementation (Maiolini and Naggi, 2011). Regarding co-design, previous research has mainly focused on the different dimensions of mass customisation and consumers' preferences whereas little research has focused on the interactive features of co-design communities (Wu, 2010). There is a growing body of literature about the concept of co-creation (Prahalad and Ramaswamy, 2004), although there is very little research about how co-creation may be used together with other strategic design management tools. Finally, the concept of crowdcrafting remains largely under-explored in the literature.

## CONCLUSION

The purposes of this study were to analyse how SMEs make use of tools for design management and how their usage could have an impact on consumer's brand experience. The findings suggest that using tools for design management such as crowdsourcing, co-design, co-creation and crowdcrafting can have a positive impact on customer perception. First of all, Berto Salotti's workshops imply that collectively designed products can be a useful outlet for positioning the brand within a modern and innovative background. The company benefits from direct assistance of consumers in creating a product that exactly matches their expectations. Consumers on the other hand can be creative and acquire certain technical know-how, especially, designing a product. The different crowd-based concepts used by Berto Salotti can make a difference and create competitive advantages. The combination of

crowdsourcing, co-design, co-creation and crowdcrafting multiplies the number of skill levels involved with the brand and its products whereas the workshops created an inspiring learning atmosphere. The company creates in this context a unique customer experience.

With these findings, the present study responds to calls in the literature to provide more empirical evidence on the usage and benefits of tools for design management, especially at SME. Qin *et al.* (2016) for instance argue that the potential benefits of crowdsourcing in product design are well-documented but little research exists on the barriers and opportunities of adopting it in new product development of SMEs. The findings of this study also substantiate the findings of Ahn *et al.* (2017) in this regard. Ahn *et al.* (2017) show that CEO's positive attitude, entrepreneurial orientation, patience and education can play important roles in facilitating open innovation in SMEs.

### **IMPLICATIONS**

The adoption of innovative project instruments such as crowdsourcing, co-design, co-creation and crowdcrafting, inside a traditional product development model, can be effective as a competitive path for SMEs both in terms of brand value and product innovation. The multidimensional character of non-voluntary customer participation could incite managers to interact with customers before consumption. Managers could benefit from the concepts linked with non-voluntary customer participation as a way to diagnose both how and to what extent customers should take care of their own responsibilities in the product delivery and take actions to teach or educate customers about new products or services.

Incremental innovations can be systematically communicated and exploited to the market thanks to such approaches. This can lead to substantial improvements of empathy between the consumer and the company as well as improvements in the perceived value of the product and the brand. The case of Berto Salotti shows that design management tools are able to create an active and participatory online network that supports the activities of the company communication on the internet and in traditional media. The coherence of individual activities in the workshops “#DivanoxManagua” and “#Sofa4Manhattan” can favour innovation in the medium and long term.

### **RECOMMENDATIONS**

In order to further analyse the potential of the presented tools for design management and their impact on customer experiences, it is necessary to adopt a holistic perspective including the recognition of

contributions to volunteers and all types of involved stakeholders. Business economics evolve and need to consider also most recent declinations of production and marketing. In this context, empirical studies using quantitative analyses to explore both the economic sustainability of crowdcrafting projects would be recommended for further research. With regard to the impacts of the collective product innovation processes chosen by Berto Salotti, it would also be interesting to analyse the impacts on brand perception in further research. Especially their role in creating a unique customer experience is of interest. Larger data samples or interviews may in fact provide deeper understanding of the usage of the design management tools. Identifying their role and their influence on customer choice behaviour can provide new insights. For this purpose, a suitable scale for measuring brand equity created by the aims of the discussed tools for design management seems to be interesting for considerations.

### **REFERENCES**

- Acklin, C., 2013. Design management absorption model: A framework to describe and measure the absorption process of design knowledge by SMEs with little or no prior design experience. *Creativity Innovation Manage.*, 22: 147-160.
- Ahn, J.M., T. Minshall and L. Mortara, 2017. Understanding the human side of openness: The fit between open innovation modes and CEO characteristics. *R&D Manage.*, 47: 727-740.
- Anonymous, 2011. Science affects all of us: Science needs all of us. Scifabric/Crowdcrafting, <https://crowdcrafting.org/about>.
- Bahemia, H. and B. Squire, 2010. A contingent perspective of open innovation in new product development projects. *Int. J. Innovation Manage.*, 14: 603-627.
- Bargellini, J.F., 2014. [Building a Design-Oriented Company]. FrancoAngeli, Milan, Italy, Pages: 175 (In Italian).
- Ben Youssef, K., T. Leicht, M. Pellicelli and P.J. Kitchen, 2017. The importance of Corporate Social Responsibility (CSR) for branding and business success in Small and Medium-Sized Enterprises (SME) in a Business-to-Distributor (B2D) context. *J. Strategic Marketing*, 25: 1-17.
- Bilgram, V., A. Brem and K.I. Voigt, 2008. User-centric innovations in new product development-systematic identification of lead users harnessing interactive and collaborative online-tools. *Intl. J. Innovation Manage.*, 12: 419-458.

- Bonfanti, A. and F. Brunetti, 2014. [Generative intelligence in action: Crowdcrafting experiences in the projects #DivanoxManagua and # Sofa4 Manhattan by Berto Salotti]. Proceedings of the XXVI Annual Conference on Sinergie, November 13-14, 2014, University of Cassino and Southern Lazio, Cassino, Italy, ISBN:978-88-907394-4-6, pp: 123-136.
- Bonfanti, A. and F. Brunetti, 2016. Crowdcrafting as a new manufacturing model: The experience of Berto Salotti. *Sinergie Ital. J. Manage.*, 33: 151-168.
- Bretschneider, U., M. Huber, J.M. Leimeister and H. Krcmar, 2008. Community for innovations: Developing an integrated concept for open innovation. Proceedings of the 2008 IFIP International Working Conference on Open IT-Based Innovation: Moving Towards Cooperative IT Transfer and Knowledge Diffusion, October 22-24, 2008, Springer, Madrid, Spain, ISBN: 978-0-387-87502-6, pp: 503-510.
- Borja De Mozota, B., 2003. Design Management: Using Design to Build Brand Value and Corporate Innovation. Allworth Press, New York, USA., ISBN:1-58115-283-3.
- Brown, T., 2009. Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation. HarperCollins, New York, USA., ISBN:9780061937743, Pages: 272.
- Buecheler, T., J.H. Sieg, R.M. Fuchslin and R. Pfeifer, 2010. Crowdsourcing, open innovation and collective intelligence in the scientific method-a research agenda and operational framework. Proceedings of the 12th International Conference on Synthesis and Simulation of Living Systems (Artificial Life XII), August 19-23, 2010, University of Southern Denmark, Odense Kingdom, Denmark, pp: 679-686.
- Bughin, J., M. Chui and B. Johnson, 2008. The next step in open innovation. *McKinsey Q.*, 4: 1-8.
- Busarovs, A., 2011. Crowdsourcing as user-driven innovation, new business philosophy's model. *J. Bus. Manage.*, 4: 53-60.
- Casalegno, C., M. Pellicelli and C. Civera, 2017. CSR and human capital as levers for enhancing shareholder value creation: An early investigation of the largest European companies. *Global Bus. Econ. Rev.*, 19: 448-467.
- Cautela, C., 2007. [Design Management Tools]. FrancoAngeli, Milan, Italy, ISBN:9788846486660, Pages: 144 (In Italian).
- Cautela, C., F. Zurlo, K.B. Youssef and S. Magne, 2012. [Management Design Instruments: Theories and Practical Cases]. De Boeck, Paris, France, (In French).
- Celaschi, F. and A. Deserti, 2007. [Design and Innovation: Tools and Practices for Applied Research]. Carocci Publisher, Rome, Italy, ISBN:9788843040926, Pages: 148 (In Italian).
- Chesbrough, H. and A.K. Crowther, 2006. Beyond high tech: Early adopters of open innovation in other industries. *R&D Manage.*, 36: 229-236.
- Chesbrough, H., 2003. Open Innovation: The New Imperative for Creating and Profiting from Technology. Harvard Business School Press, Boston, MA., USA., ISBN-13: 9781422102831, pp: 56-61.
- Chesbrough, H.W., 2003. The era of open innovation. *MIT Sloan Manage. Rev.*, 44: 35-41.
- Chiva, R. and J. Alegre, 2009. Investment in design and firm performance: The mediating role of design management. *J. Prod. Innovation Manage.*, 26: 424-440.
- Christensen, J.F., M.H. Olesen and J.S. Kjaer, 2005. The industrial dynamics of open innovation-evidence from the transformation of consumer electronics. *Res. Policy*, 34: 1533-1549.
- Colombo, C.M. and M. Pellicelli, 2013. Outsourcing strategies: The rules for an effective decision making process. *Change Manage. Intl. J.*, 12: 31-43.
- Cooper, R. and S. Junginger, 2011. General Introduction: Design Management-A Reflection. In: *The Handbook of Design Management*, Cooper, R., S. Junginger and T. Lockwood (Eds.). A & C Black, Oxford, England, UK., ISBN:978-1-4725-7017-8, pp: 1-34.
- Creswell, J.W., 2012. *Qualitative Inquiry and Research Design: Choosing among Five Approaches*. 3rd Edn., Sage Publications Inc., California, USA., ISBN-13: 978-1412995306, Pages: 472.
- Di Gangi, P.M. and M. Wasko, 2009. Steal my idea! Organizational adoption of user innovations from a user innovation community: A case study of Dell IdeaStorm. *Decis. Support Syst.*, 48: 303-312.
- Enkel, E., O. Gassmann and H. Chesbrough, 2009. Open R&D and open innovation: Exploring the phenomenon. *R & d Manage.*, 39: 311-316.
- Erichsen, P.G. and P.R. Christensen, 2013. The evolution of the design management field: A journal perspective. *Creativity Innovation Manage.*, 22: 107-120.
- Farr, M., 1965. Design management: Why is it needed now?. *Des. J.*, 200: 38-39.
- Flyvbjerg, B., 2006. Five misunderstandings about case-study research. *Qualitative Inquiry*, 12: 219-245.
- Fuller, J., K. Matzler and M. Hoppe, 2008. Brand community members as a source of innovation. *J. Product Innovation Manage.*, 25: 608-619.

- Gardien, P., M. Rincker and E. Deckers, 2016. Designing for the knowledge economy: Accelerating breakthrough innovation through co-creation. *Des. J.*, 19: 283-299.
- Gassmann, O., E. Enkel and H. Chesbrough, 2010. The future of open innovation. *R&D Manage.*, 40: 213-221.
- Giannopoulou, E., A. Ystrom and S. Ollila, 2011. Turning open innovation into practice: Open innovation research through the lens of managers. *Intl. J. Innovation Manage.*, 15: 505-524.
- Gorb, P., 1990. Design as a Corporate Weapon. In: *Design Management*, Gorb, P., (Ed.). Architecture Design and Technology Press, London, England, UK., pp: 67-80.
- Gorb, P., 1990. Introduction: What is Design Management. In: *Design Management*, Gorb, P., (Ed.). Architecture Design and Technology Press, London, England, UK., pp: 1-9.
- Hippel, E.V. and R. Katz, 2002. Shifting innovation to users via toolkits. *Manage. Sci.*, 48: 821-833.
- Hippel, E.V., 1998. Economics of product development by users: The impact of sticky local information. *Manage. Sci.*, 44: 629-644.
- Hippel, E.V., 2005. *Democratizing Innovation*. MIT Press, Cambridge, Massachusetts, USA., ISBN: 0-262-00274-4.
- Holley, R., 2010. Crowdsourcing: How and why should libraries do it?. *D Lib Mag.*, 16: 1-21.
- Howe, J., 2006. Crowdsourcing: A definition. [http://crowdsourcing.typepad.com/cs/2006/06/crowdsourcing\\_a.html](http://crowdsourcing.typepad.com/cs/2006/06/crowdsourcing_a.html).
- Howe, J., 2006. The rise of crowdsourcing. *Wired*, USA. <https://www.wired.com/2006/06/crowds/>
- Howell, P., 2008. Utilizing co-design to create market-driven products. *Pragmatic Marketer*, 6: 28-30.
- Huizingh, E.K., 2011. Open innovation: State of the art and future perspectives. *Technovation*, 31: 2-9.
- Kotler, P. and G.A. Rath, 1984. Design: A powerful but neglected strategic tool. *J. Bus. Strategy*, 5: 16-21.
- Lazzarotti, V., R. Manzini and L. Pellegrini, 2010. Open innovation models adopted in practice: An extensive study in Italy. *Measuring Bus. Excellence*, 14: 11-23.
- Lichtenthaler, U., 2008. Open innovation in practice: An analysis of strategic approaches to technology transactions. *IEEE Trans. Eng. Manage.*, 55: 148-157.
- Lichtenthaler, U., 2011. Open innovation: Past research, current debates and future directions. *Acad. Manage. Perspect.*, 25: 75-93.
- Luthje, C., C. Herstatt and E.V. Hippel, 2005. User-innovators and local information: The case of mountain biking. *Res. Policy*, 34: 951-965.
- Maiolini, R. and R. Naggi, 2011. Crowdsourcing and SMEs: Opportunities and Challenges. In: *Information Technology and Innovation Trends in Organizations*, D'Atri, A., M. Ferrara, J. George and P. Spagnoletti (Eds.). Springer, Berlin, Germany, ISBN: 978-3-7908-2631-9, pp: 399-406.
- Miller, K. and J. Moultrie, 2013. Delineating design leaders: A framework of design management roles in fashion retail. *Creativity Innovation Manage.*, 22: 161-176.
- Pellicelli, M., 2009. From outsourcing to offshoring and virtual organizations: How management is redefining corporate boundaries of companies. *Intl. J. Knowl. Culture Change Manage.*, 9: 77-88.
- Pellicelli, M., 2009. *L'outsourcing E l'offshoring Nell'economia Dell'impresa*. Giappichelli Publisher, Turin, Italy, ISBN:9788834895573, Pages: 188.
- Piller, F.T. and D. Walcher, 2006. Toolkits for idea competitions: A novel method to integrate users in new product development. *R&D Manage.*, 36: 307-318.
- Poetz, M.K. and M. Schreier, 2012. The value of crowdsourcing: Can users really compete with professionals in generating new product ideas?. *J. Prod. Innovation Manage.*, 29: 245-256.
- Prahalad, C.K. and V. Ramaswamy, 2004. Co-creating unique value with customers. *Strategy Leadersh.*, 32: 4-9.
- Qin, S., D.V.D. Velde, E. Chatzakis, T. McStea and N. Smith, 2016. Exploring barriers and opportunities in adopting crowdsourcing based new product development in manufacturing SMEs. *Chin. J. Mech. Eng.*, 29: 1052-1066.
- Radicic, D. and G. Pugh, 2017. Performance effects of external search strategies in European small and medium-sized enterprises. *J. Small Bus. Manage.*, 55: 76-114.
- Rigby, D. and C. Zook, 2002. Open-market innovation. *Harvard Bus. Rev.*, 80: 80-89.
- Schrage, M., 1999. *Serious Play: How the World's Best Companies Simulate to Innovate*. Harvard Business Publishing, Boston, Massachusetts, USA., ISBN:0-87584-814-1.
- Sebastian, R., 2005. The interface between design and management. *Des. Issues*, 21: 81-93.
- Shapovalova, L.S., L.N. Shmigirilova, E.V. Lukyanova and S.D. Lebedev, 2015. Technologies of crowdsourcing in regional government. *Intl. Bus. Manage.*, 9: 1634-1639.
- Steen, M., M. Manschot and N.D. Koning, 2011. Benefits of co-design in service design projects. *Intl. J. Des. Suppl.*, 5: 53-60.

- Strauss, A.L. and J.M. Corbin, 1990. *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. 17th Edn., Sage Publication, London, ISBN: 9780803932500, Pages: 270.
- Teece, D.J., G. Pisano and A. Shuen, 1997. Dynamic capabilities and strategic management. *Strat. Manage. J.*, 18: 509-533.
- Tidd, J. and J. Bessant, 2001. *Managing Innovation: Integrating Technological, Market and Organizational Change*. 2nd Edn., John Wiley and Sons, Chichester.
- Topalian, A., 1979. *The Management of Design Projects*. Associated Business Press, London, England, UK., ISBN:9780852270783, Pages: 173.
- Tran, A., S.U. Hasan and J.Y. Park, 2012. Crowd participation pattern in the phases of a product development process that utilizes crowdsourcing. *Ind. Eng. Manage. Syst.*, 11: 266-275.
- Van Mieghem, J.A., 1999. Coordinating investment, production and subcontracting. *Manage. Sci.*, 45: 954-971.
- Van de Vrande, V., J.P.J. de Jong, W. Vanhaeverbeke and M. de Rochemont, 2009. Open innovation in SMEs: Trends, motives and management challenges. *Technovation*, 29: 423-437.
- Van de Vrande, V., W. Vanhaeverbeke and O. Gassmann, 2010. Broadening the scope of open innovation: Past research, current state and future directions. *Intl. J. Technol. Manage.*, 52: 221-235.
- Vargo, S.L. and R.F. Lusch, 2004. Evolving to a new dominant logic for marketing. *J. Market.*, 58: 1-17.
- Vargo, S.L. and R.F. Lusch, 2008. Service-dominant logic: Continuing the evolution. *J. Acad. Marketing Sci.*, 36: 1-10.
- Verganti, R., 2009. *Design Driven Innovation: Changing the Rules of Competition by Radically Innovating what Things Mean*. Harvard Business School Publishing, Boston, Massachusetts, ISBN:978-1-4221-2482-6, Pages: 271.
- Vladislavlevna, L.S. and D.R. Alekseevich, 2015. Internal crowdsourcing projects in the company: Organization and realization. *Intl. Bus. Manage.*, 9: 145-150.
- Von Hippel, E., 1986. Lead users: A source of novel product concepts. *Manage. Sci.*, 32: 791-805.
- Von Hippel, E., 1988. *The Sources of Innovation*. Oxford University Press, New York, USA.
- Wilkinson, C.R. and A. De Angeli, 2014. Applying user centred and participatory design approaches to commercial product development. *Des. Stud.*, 35: 614-631.
- Wu, J., 2010. Co-design communities online: Turning public creativity into wearable and sellable fashions. *Fashion Pract.*, 2: 85-104.
- Wynarczyk, P., P. Piperopoulos and M. McAdam, 2013. Open innovation in small and medium-sized enterprises: An overview. *Intl. Small Bus. J.*, 31: 240-255.
- Yin, R.K., 2003. *Applications of Case Study Research*. 2nd Edn., SAGE Publications, Thousand Oaks, California, USA., ISBN:0-7619-2551-1, Pages: 174.