

User Orientation through Open Innovation and Customer Integration

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Abstract. The concepts of market orientation in innovation practices and its interrelationship with business success has been explored from a number of perspectives for establishing deeper understanding of the role of the customer/user in the innovation process. User oriented design offers a significant role in the success of innovation of products and services and is found to be an effective way for value creation and competitive advantage. Value of any service is created, comprehended and defined by the customer/user in the situation of service use, also called value-in-use.

This study aims to make explicit the process of integrating/involving the customer/user in the innovation process and of conceptualising customer value creation, by identifying different perspectives of customer value creation. Subsequently open innovation is investigated as a tool for integrating customers/users in the innovation process, in particularly in the ideation stage of innovation. Open innovation, is a paradigm that assumes that companies can and should use external ideas in addition to internal ideas in order to create value. Open innovations also assume that internal ideas can be taken to market by external channels, outside the current business of the company. Online social networks are in particular suitable channels for creating value in the light of open innovation. Potential ways for gaining added business value through the use of social networking practices are investigated.

Keywords: Open Innovation · Crowdsourcing · Customer Integration · User Participation · Value Creation

1 Introduction

Recent trends in the world economy push organisation to produce innovative products and services for survival, sustainability and growth. Innovation is about finding new ways of doing things and of obtaining strategic advantage. In order to keep costs down and to improve productivity processes also need to be innovative. The degree of unique offering and novelty in products or services, faster, cheaper, customised processes create the strategic advantage of innovation. Offering something unique, doing something in different ways, designing through robust platforms others can build on, reconfiguring

of parts and how systems work together can also be considered innovations providing strategic advantage (Tidd et al. 2001). Chesbrough (2003) argues that innovation is an invention implemented and taken to market. Disruptive innovation changes social practices by changing consumer behaviour and causing disruption in the way business is done. Christensen and Raynor (2003) argues that disruption innovations can initially be rejected by mainstream customers because they are not ready to use the new product or service.

In service and product innovation the concept of market orientation has been explored from a number of perspectives and its interrelation with customer value and business success has been found to be fundamental. Lewrick et al. (2011) found that competitor orientation, which is an imperative key component of market orientation, has positive relationship to incremental innovation (innovations that do not cause a significant deviance from status-quo) for start-up companies. Incremental innovations include improvements of existing products, services, processes, technical or administrative conditions. In mature organisations, on the contrary, a strong customer/user orientation was found to be related to radical innovations (breakthroughs that fundamentally change a product, service or process among others). The findings of Lukas and Ferrell (2000) also show that organisations that concentrate on their competitors are less likely to come up with radical innovations. In this paper we concentrate on the second component of market orientation, namely customer/user participation in the innovation process.

Important innovations may decline because the company developing the innovation failed to concentrate on new customers/users for the products or the services of the future. More players are brought into the game as innovation develops over time (Van de Ven et al. 2008). Customers, partnerships, company acquisitions, sponsors and others create a complex network that engages in diverse transactions necessary in order to launch the innovation to the market. The incorporation of desires and needs of customers/users in the design process has increasingly been established in recent years (Veryzer and de Mozota 2005). Especially in the early stages of the design process customers/users are consulted in order to participate in the design (Kujala 2003; Sanders 2005). The literature has suggested that higher customer involvement results in higher quality, especially in terms of meeting requirements (Berki et al. 1997). The agile development approach, for example, entails the user in the entire development process in order to ensure conformance to requirements, user satisfaction and competitive advantage. On-site customers/future users providing real life scope, setting priorities, resolving ambiguities and providing test scenarios are fundamental inputs not only in the early stages but throughout the development process (Siakas and Siakas 2006). User involvement and frequent iterations increases domain knowledge in the development process, which in turn increases developer motivation, commitment and satisfaction, key elements for success (Abrahamsson 2005; Siakas and Georgiadou 2003).

In this paper we explore the significance of customer/user involvement in the innovation process for increasing innovation and realising improved value as a result, either this happens by crowd-sourcing, co-working agreements, acquisition of start-ups with appealing technologies, or extending new developments into external companies.

2 Open Innovation

Open innovation is increasingly being introduced in international and national organisations for the creation of value (Aranha et al. 2015). Chesbrough (2003), who coined the term open innovation, describes how organisations have shifted from so called closed innovation processes towards a more open way of innovating. Closed innovation, in which companies use only ideas generated within the organisational boundaries, are characterised by big corporate Research and Development (R&D) departments and closely managed networks of vertically integrated partners. Open innovation is a paradigm that assumes that companies can and should use external ideas in addition to internal ideas to create value (Chesbrough 2003; 2011).

2.1 Value Creation Through Open Innovation

The ultimate object of innovation is to create and sustain value, preferably across various cultures. The quest to innovate drives the company to capture knowledge outside its boundaries. This can be considered as a dynamic capability of the company. The supply of information and knowledge captured externally is transferred to the company and contributes to the creation and delivery of value, thus increasing performance, profits and growth of the organisation, as well as, contributing to the reach out to new domestic and international markets. This movement to capture knowledge from outside the company is one of the driving elements in the creation of value for the company. This happens due to the fact that openness makes the operation of multifaceted dynamic capabilities (through diverse stakeholder commitment) visible. Simultaneously openness facilitates understanding and mapping of opportunities and threats. Competitiveness is increased through the increase in new ideas, combination of different viewpoints, protection and reinvention of the business model (Tecee 2007).

A central concern in an open innovation strategy is how the generated value can be captured and how potential risks can be managed and minimised. Companies need to develop business models that realise the value potential of novel technologies in uncertain contexts (Gay 2014). Customer satisfaction and value is exclusively perceived by the customer and usually involves trade-offs between what is received (e.g. quality and benefits) and what is given up to acquire this (e.g. money and time) (Overvik-Olsen and Welo 2011; Spiteri and Dion 2004). Increased customer value implies increased loyalty and for the company expanding the innovation potential to new ways of working with external partners and customers/users, thus a reciprocal value expansion.

Value of any service is created, comprehended and defined by the customer in the situation of service use. This is called value-in-use (Grönroos 2008; Vargo and Lusch 2004; 2006). The main approaches/perspectives of customer value creation in the literature were identified:

- (i) *Interaction perspective*: the use of the service by the customer is considered as mutual co-creation of value with the company that practice open innovation (e.g., Grönroos 2008; Michel et al. 2008; Prahalad and Ramaswamy 2002).

- (ii) *The service function perspective*: The emphasis is on the way the customer/user utilises the service (Wynstra et al. 2006; Christensen and Raynor 2003; Ulwick 2002).
- (iii) *Process perspective*: The processes the customer/user applies regarding the service use (Shostack 1992).
- (iv) *Customer goals perspective*: The emphasis is on the activities, experiences and goals of the customer (Heinonen et al. 2010).

Increased customer value enable companies to optimise revenue. A by-product of open innovation approach is the identification of partners for the whole open innovation value chain.

2.2 Challenges of Open Innovation

The concept of open innovation suggests that firms can boost their innovative performance by acquiring knowledge from outside the company and by deploying external channels, outside the current business of the company for commercialisation of non-core technologies (Savitskaya et al. 2010). As innovations emerge increasingly from inter-organisational cooperation, the background for such cooperation can also have an impact on the involvement of companies into open innovation processes.

There are three issues that the company interested in applying open innovation practices should take a closer look at, namely:

- i. The understanding of the importance of open innovation (Siakas et al. 2014b).
- ii. Investigation of practices for implementing open innovation (Chiaroni et al. 2011; Ebersberger, et al. 2012).
- iii. Investigation of practices of the open business model that result in creation of value (Saebi and Foss 2014; Gay 2014; Frankenberger et al. 2014; Weiblen 2014).

The literature on open innovation concentrated in the early days on Information and Communication Technology (ICT) innovations, where companies such as IBM, Intel and Lucent were used to illustrate their 'open' practices to create and capture value (Chesbrough 2003). Since then the concept of open innovation, as a business practice, has received much attention, and it has been diffused to other sectors besides ICT (Gassman et al. 2010; Huizingh, 2011).

The existing literature on open innovation has focused more extensively on the benefits than on the costs, disadvantages, limitations and risks that need to be emphasised so that companies can prepare accordingly. The following challenges were identified:

- i. *Lack of Control*: Openness implies an inherent lack of control both regarding the processes and the potential results (Mahr et al. 2010).
- ii. *Difficulties to manage incoming innovations*: Integrating ideas, insights, concepts, and solutions from open innovation initiatives into established new product development processes is a significant challenge. Also cost cuttings in R&D departments of the companies can make it more difficult to manage incoming innovations from customers/potential customers and thus decreasing the effectiveness of the open innovation (de Wit et al. 2007).

- iii. *Misappropriation of ideas*: Competitors and others may misappropriate the openly exposed business idea (Gould 2012; Wadhaw et al. 2011; Dahlander and Gann 2010).
- iv. *Protection of Intellectual Property Rights (IPRs)*: Many open innovation mechanisms assume disclosure of information, for example by freely revealing experimental result to the public. The complexity of IPR and fear of infringements may be a barrier for companies to engage in open innovations (Savitskaya et al. 2010).
- v. *Reduction of openness*: At some point returns of openness may be diminishing due to poor maintenance of an open attitude (Laursen and Salter 2006).
- vi. *Human resource challenges*: How to improve employee engagement (Siakas et al. 2014b).
- vii. *Culture of sharing*: Sharing information without and trusting stakeholders (Siakas et al. 2012).
- viii. *Information and Communication Technology (ICT) literacy*: Not all people are confident users of ICTs (Georgiadou et al. 2016).

Involvement within the open innovation process requires interaction and disclosure (Gould 2012). Relationship building and engagement stimulates the organisation to access information from its stakeholders (Sharma 2005). This information creates a knowledge transfer that can be used to create tactics that successfully impact operations, profitability and the creation of value. Considering organisational, social and ethical benefits of engagement with relevant stakeholders enhances the concept of open innovation to levels beyond pure practical issues.

2.3 Social Networking as a Tool for Open Innovation

Online social networks are particularly suitable channels for creating value in the light of open innovation (Siakas et al. 2014a). One form of innovation can be reflection in practice by launching prototypes for user tests before the product is launched on the market (Siakas et al. 2012). An emergent opportunity is tapping collective explicit and tacit knowledge and intelligence of users (customers and consumers) by social media networks and thus reaching beyond the conventional boundaries of the organisation (Siakas et al. 2012). The advantage is the leverage of disparate assets of people from different cultures, different disciplines and different organisation. However little research is done so far to clearly indicate how valuable the delivered service is in the end.

Another term used in social networking context is ‘crowdsourcing’, the act of outsourcing tasks, traditionally performed by an employee or contractor, to a large group of people or community (a crowd), through an open call (Siakas et al. 2014a). Crowdsourcing can be seen as a tool to bring external input into the organisation. Another contemporary word is ‘user-driven innovation’, which can be considered as a technique in which companies gain insights from users, which can then be used in the innovation process.

The movement of online social networks, which generally refers to communities and hosted services facilitating collaboration and sharing between users, promote the interaction among members by providing a dynamic platform which enables versatile

services such as discussions, sharing of multimedia content, organisation of social events and information sharing to name a few. These networks can comprise millions of active members from all continents and from all age groups. Social media is a media for co-creation. When social media is used for social product development, an active, creative and social collaboration process between producers and customers/users takes place, facilitated by a company, in the context of new product or service development. It is important to make a differentiation between customer co-creation and conventional market research in new product development. In market research, companies ask a representative sample of customers for input to their innovation process. In the early stages of an innovation project, customer preferences or unmet needs are identified via surveys, qualitative interviews, or focus groups. In the later stages of an innovation project, different solutions or concepts are presented to customers so they can react to proposed design solutions.

A recent form of market research, without active co-creation, is to analyse existing customer information from diverse input channels, such as feedback from sales people, internet log files, or research reports by third parties (Dahan and Hauser 2002). In this area social media applications have created an enormous additional input channel. In this context, particularly the method of netnography is noteworthy; “*a new qualitative research methodology that adapts ethnographic research techniques to study cultures and communities that are emerging through computer mediated communications*” (Kozinets 2002).

3 Customer Integration for Obtaining Stakeholder Requirements and Expectations

The literature suggests customer integration (customer involvement) as an important factor for success of innovation (Straub et al. 2013). In particularly service companies, which inherently build on customer interaction, need to appreciate this approach.

Three main factors are considered to have a positive influence by customer involvement, namely:

- (i) *Decreased costs* (Boyer et al. 2002; Xue and Harker 2002; Lovelock and Young 1979);
- (ii) *Increased customer satisfaction* (Auh et al. 2007);
- (iii) *Increased market shares* (Herstatt and von Hippel 1992).

3.1 Customer Job-Roles

There are different job-roles that a customer can adopt when involved in the innovation process of a company. Straub et al. (2013) identified five customer roles that are the most relevant for the industry.

- (i) *Service-Specifier*: The customer, who has a precise expectation of what the service should do, specifies the requirements of the service before the service delivery

- (Berki et al. 1997). In addition to defining the service, the customer triggers the actual service delivery through his/her actions (Lengnick-Hall 1996).
- (ii) *Co-Designer*: The customer assists as an ‘*organisational consultant*’ during decision-making and design processes (Schneider and Bowen 1995). The customer contributes to the creation of new products and services in this role, and the company obtains an early insight into the opinions and preferences of the customer.
 - (iii) *Co-Producer*: The customer provides input in the form of production factors, such as work, know-how, information, money, etc. The customer acts in a way comparable to a part-time employee of the company during his involvement in the processes (Schneider and Bowen 1995). In the agile approach of software development, for example, the customer is part of the software development team taking actively part in the specification and creation of the service (software in this case) throughout the life-cycle (Siakas and Siakas 2007).
 - (iv) *Co-Marketer*: The customer supports the marketing of a product or service, particularly through Word-Of-Mouth (WOM) actions. The commercial effect of this can be positive or negative, depending on the satisfaction and experience of the customer with the product or service (Siakas et al. 2014b; Swan and Oliver 1989).
 - (v) *Quality-Controller*: The customer assists in assuring the quality of production and delivery. This can be achieved e.g. through involvement in testing phases, or through timely and correct feedback for improvements (Zeithaml and Bitner 2003).

The Service-Specifier and Co-Designer are mentioned as two of the most important customer roles in customer integration, particularly in the early phases of service and solution development (Olsen and Welo 2011). In the co-producers job-role the customers/users are partners in the design process. In the agile approach on-site customers, provide scope, set priorities, resolve ambiguities and provide test scenarios. The success of agile practices lies in their flexibility to volatile end-user requirements through intensive informal developer and customer interaction (Siakas and Siakas 2009).

3.2 Customer Value Through Customer Integration

It is generally accepted that the main object of innovation is to create value. However, value manifestations are often complex, temporal and highly context dependent. To create and sustain value, the innovators must not only appreciate the complexity of value, they must also cater for the time-variant and context dependent user conceptions of value (Sheriff et al. 2013). Straub et al. (2013) noticed that the main value derived for the customer in the customer integration process is increased customer satisfaction that subsequently leads to customer loyalty. They conclude that the potential of customer integration in the early phases of the innovation process, also called the ideation process (Siakas et al. 2012), clearly correlate with the level of specialisation and individualisation of the solution. The key features of value from the various conceptualisations can be summarised as follows (Sheriff et al. 2013):

- i. Value is a complex and multi-dimensional phenomenon;
- ii. Value can be instrumental and/or terminal;
- iii. Value is often temporal or time variant;

- iv. The sources of value include: the objective characteristics of an object, the subjective disposition or opinion of a subject (perceiver) and the interaction between a subject and an object;
- v. Value manifestations are largely context dependent;
- vi. Value manifestation at individual user level is often in the form of Conceived value (the user's projection of the potential benefit they might derive from an object), Operative value (the extent to which a user likes or dislikes the content or process of use of an object or service), Object value (approximates to the quality of the object or service, or what it affords the user by virtue of its characteristics) or a combination of these forms of value.

The more involved the customer/user is in the innovation process the more customer value and satisfaction is created (Berki et al. 1997, Siakas et al. 2012). Three customer groups that the organisation needs to deal with have been observed (Straub et al. 2013), namely:

- i. Customers that are happy their suggestion was implemented and for whom the new solution offers an actual improvement.
- ii. The group of customers that have not been involved in the solution development, but could potentially also benefit from the results.
- iii. The group of customers whose suggestions were not integrated into the new developments, or who do not benefit from the new solution, because their needs diverge to a high degree from the needs of the first group of customers.

Customer value is a dynamic concept as it may change over time depending on the situation. Customer value also has to be defined at different abstraction levels. Consequently, it is important to selecting appropriate target customers when designing customer integration programmes.

3.3 Challenges in Customer Integration

From the available literature, we have identified three main challenges that can arise in customer integration:

- i. Lack of customer motivation (Siakas and Siakas 2007);
- ii. Coordination and control of overhead costs (Straub et al. 2013);
- iii. Loss of know-how (Enkel et al. 2005a; 2005b).

To obtain satisfied customers and repeat orders customers/users are usually put first recognising that user satisfaction and fitness for purpose is the ultimate measurement for high quality (Siakas and Siakas 2006). Quality attributes considering the end product is for the user of greatest interest. Thus it is inevitable that the more customer/user involvement in the development and innovation process the higher the possibility for conformance to requirements, fit for purpose and user satisfaction and ultimately quality of end product. However, customer identification can be difficult and may require the identification of suitable internal customer representative(s) providing a single point of

contact both for the team and senior management on a daily basis. In this case Social Networking has offered new opportunities to reach out to potential customers.

In development of information systems, customer/user involvement has been identified to improve software quality (Siakas and Siakas 2006; 2007; 2009). In agile development participation is a main key issues. Co-This is due to the intangible nature of software and the difficulties of software professionals to capture and understand the business domain/system requirements. The cyclic and incremental development with high iteration frequency in agile development also provides opportunities for product feedback (Karlström and Runeson 2005). Collective code ownership, pair programming, user involvement and team rotation are examples of participation. The reason for the enthusiastic software developers in agile development seems to be that they have high levels of job satisfaction because of broadened participation and their enthusiasm is an expression of their job satisfaction (Siakas and Siakas 2006).

4 The Connected Customer/User

The model of the customer/user/consumer that is connected is a shift for the company, creating an enterprise that will draw strength by its stakeholders in general and its customers/users in particular. In this approach social networking tools and cooperating technologies are the driving factors of the next generation of productivity and creates a completely different model of leadership (Marks 2009). *“The companies that will manage to use the incredible power of social networking are those who will design an IT architecture capable of supporting the use of these technologies and mitigate the risks that they pose”*.

4.1 The Increased Use of Social Networking Tools

In the CISCO survey (Marks 2009), carried out in 2009 by 105 extensive interviews of 97 organisation in 20 countries around the globe, it was found that social networking tools are being used in mainly core business areas including marketing and communications, human relations, and customer service departments. Within marketing and communications, these tools have already become an integral part of the initiatives of the organisation. It was found that a shift from *“broadcast”* to *“conversational”* communications and rich interactions are taking place.

4.2 Need for Better Management and Involvement of IT in Social Networks

However, only one in seven companies taking part in the CISCO survey (Marks 2009) presented a typical process related to the adoption of social networking tools for the purposes of the business, indicating that potential risks related to social media tools in a business are either neglected or are insufficiently understood.

Only one in five participants identified what tactics are used in the social networking technologies in business. By these results we understand that the control and management of the social media initiatives is difficult; a specific person responsible within the company

is needed. Due to the unstructured nature of social networking, companies are still fighting over the creation and the adoption of tactics, as the compliance with a standard governance process by more structured areas (IT for example) often does not work in social networking. Businesses find it difficult to find the appropriate balance between social and personal nature of these tools, while maintaining the business supervision.

Only one in 10 surveyed stated direct involvement of IT in social networking initiatives. Although, the IT department is not typically involved in the decisions regarding use of social media in business, the surveyed acknowledged the need for these tools to be upgraded and properly integrated with existing business processes, to yield the best results and added value.

4.3 The Future of Social Networking and Collaboration Tools in the Business

The online social networking and collaborations tools are here to stay and to evolve to more and more complex social business software; web-based applications for creating online communities that incorporate a broad range of features found in social networking software, community software, and collaboration software. Social business software applications are designed for use in a business context, mainly to supplement or substitute for company intranets in internal instances and, in external instances, to supplement the web properties that companies use to organise their outbound communications. These tools will continue to influence the way that people work and businesses operate. The key for businesses is to adopt and integrate these tools in a controlled manner (Siakas et al. 2014a).

5 Potential Ways of Using Social Media in Business

With regard to business strategy, the social media are used as means for creating corporate image, information, communication and development of relationships with clients (Haythornthwaite 2005). Recently, social networking is increasingly used for reaching out to potential customers in the ideation process of innovation and for valorisation (dissemination and exploitation) of innovative results (Siakas et al. 2012).

Companies that are able make proper use of the social networks can shape their image, develop public relations and create and/or positively influence the discussions taking place around the brand increasing significantly their readability and reliability (Yamada et al. 2012).

Regular users of social media, consider it a great place to find others working in the field, to share and build on information, rather than multiple users reinventing the wheel. Trust and relationships are built with an increased focus on authenticity through regular interaction, whether that is with new external contacts, or for internal communications. Users become adept at adapting to each new system.

5.1 Social Media for Understanding Customer/User Needs

Efficiency of social media lies in the details. The social media platform is a source of information and knowledge; it has a clear identity and gives the user multiple options of interaction. In order to be effective it should be updated frequently.

The social networking applications create a significant number of opportunities and challenges in the business world. In recent years, there is a rapid growth of technological applications based on the logic of social networking on the World Wide Web, affecting the business. New technologies, such as weblogs (blogs), wikis, social labelling (tagging), social networking websites, create opportunities for new ways of intragroup cooperation and knowledge creation, knowledge sharing and knowledge transfer. They change the landscape of providing services but also influence inter-company exchanges, while reshaping existing business applications.

5.2 Social Media for Valorisation

Effective innovation should not only facilitate the creation of value but should also ensure that such value is sustained and shared to its optimum potential. In particular projects consisting of purely research oriented and/or technically oriented partners seem to lack knowledge of the importance of dissemination, exploitation and valorisation for sustainable development (Siakas et al. 2012). Social media in business can also be used for valorisation. Potential outcomes of valorisation include (Siakas et al. 2014b; Geor-giadou et al. 2013):

- i. Direct interaction and communication with members inside and outside the group;
- ii. Horizontal and vertical flow of information;
- iii. Strengthened relations and exchange of views;
- iv. Development of creativity and openness;
- v. Tools for project management and team organisation.

All innovation projects need to valorise their results for maximising achievements and increasing sustainability after their lifetime. This includes transfer of results and best practices to different and broader contexts. Social media is a tool in particular useful for reaching out to different and broader contexts. In order to maximise value of valorisation a meta-framework, called INCUVA was developed by Sheriff et al. (2013) including the following components:

- i. Defining and understanding value;
- ii. Determining the potential value manifestations;
- iii. Understanding the diverse cultural settings in which the innovation would be used;
- iv. Developing and adopting effective dissemination strategies and tools (including social media) to optimise the value of the innovation.

The INCUVA meta-framework will help organisations to formulate strategies, policies and actions for maximising the probability of successful innovations and valorisation.

5.3 Practical Issues Regarding Social Media in Business

In the preparation for adopting a suitable social media platform it is important to try to answer the following questions:

- i. Vision, aims: What are the objectives and goals of the company - what does it want to achieve?
- ii. Target group: What audience will the company focus on?
- iii. Resources: What is the capacity of the company? How will technologies be managed and how will they be used by the employees?
- iv. Competitors: Who are the main competitors and what do they do?
- v. Plan: Which tools and tactics does the company aim to use? When, how and what initiatives should be taken (or not taken)?
- vi. Metrics: How will success be measured?

Some practical steps will help answering the questions:

- i. Identify the reasons why the company/project is interested/aims to start using social media;
- ii. Browse through diverse social media platforms to find their advantages and disadvantages;
- iii. Select a suitable platform;
- iv. Ensure that adequate technology is available for fast and secure access to cyberspace;
- v. Appoint a specific person within the company for daily checking the posts, replying when needed and informing the company about movements on the social media.

In short companies need to investigate different concerns before creating a social media strategy and a content plan. There are several issues that need to be solved, regarding the adoption, development and governance of social networking in business.

5.4 Advantages and Disadvantages of Using Social Media in Business

The main advantages offered by social media in a business are various. Some of them are listed below:

- i. Market segmentation based on various criteria such as social, geographical, demographic, ethnic, religious becomes much easier, while the “information” conveys easily and rapidly”;
- ii. The opportunity offered to the company to approach and appeal to a huge market size, without geographical limitations;
- iii. The social networking applications enable a company to constantly offer incentives to consumers, which increases their loyalty to products and services (Kim 2000);
- iv. Continuous and easy feedback on the behaviour and consumer satisfaction, which facilitates the research and contributes to the development of business (Kim 2000);
- v. The use of social networking tools such as Facebook and Twitter, as collaboration platform brings technology together with businesses, connects people with

information, establishes potential new routes to market and improves customer communication and dissemination of the trademark (Boyd and Ellison 2007);

- vi. Company presentation 24 hours circadian throughout the year (Siakas et al. 2014a);
- vii. Reduced operating costs (Siakas et al. 2014b);
- viii. It is relatively easy to find new staff (Gross and Acquisti 2005).

The business world is in the early stages of adopting these tools and in the process to adopt major challenges, such as the need to manage these tools and the participation of Information and Communication Technology (ICT) that may affect the completion and adoption of new platforms and technologies (Haythornthwaite 2005).

On the other hand social media can act also have a negatively impact on a company (Gross and Acquisti 2005), such as:

- i. Consuming of time and subsequent cost involved in the process of informing clients, creating and processing information;
- ii. Failure to accept the new application from the company staff as a result of lack of knowledge and skills;
- iii. Unsafe environment when publishing information on the Internet;
- iv. Negative reviews/publication by customers and competitors;
- v. The use of social networking at work can lead to inefficiency of staff.

6 Discussions

The use of social networks by customers/users in the course of their work has the potential to transform the whole world of work. Many well-known companies leverage the connectivity options offered by social media to enhance innovation, productivity, reputation, cooperation, as well as commitment of customers/users (Reffay and Chanier 2003).

More and more companies are discovering the benefits and usefulness of social networks for their innovation practices. Developing new approaches to innovation is no longer just an option for organisations that want to grow and thrive; it is a 21st century imperative. The process of ideation is a key element to any innovation portfolio strategy. Open innovation is about expanding the innovation potential extending the innovation process into new ways of working with external partners. Whether this manifests itself as new collaboration agreements, acquisition of start-ups with contemporary ideas and technologies, or spinning out new developments into external companies the ultimate goal is the same, namely to increase innovation and realise increased value as a result.

As innovations emerge increasingly from inter-organisational cooperation, the background for such cooperation can also have an impact on the involvement of companies into open innovation processes. Open innovation is facilitated by a company with an active innovation strategy in the context of new product or service development. Customers/users are invited to co-creation thus denoting an active, creative and social collaboration process between the company and customers/users. Crowd-sourcing is a contemporary tool for reaching out to potential customers/users for social networking.

The number of companies implementing open innovation and co-creation is steadily growing. However, there is a potential that innovative customers could become a scarce resource in the future, for which companies have to compete in order to get them on-board, thus adding a new side to competition among customers.

7 Conclusion and Further Work

This paper was concentrating on an extensive conceptual literature review through regarding customer/user integration/involvement in the innovation process and its relationship with potential value creation. The open innovation approach was investigated and in particularly different ways of using social media for involving potential user/customers in the innovation process was examined. Further work will concentrate on collecting data from the industry regarding their practical experiences and success stories.

References

- Abrahamsson, P.: Project manager's greetings - agile greetings. *Agile Newsl.* **1**, 1 (2005)
- Aranha, E.A., Garcia, N.A.P., Correa, G.: Open innovation and business model: a Brazilian company case study. *J. Technol. Manag. Innov.* **10**(4), 91–98 (2015)
- Auh, S., Bell, S.J., McLeod, C.S., Shih, E.: Co-production and customer loyalty in financial services. *J. Retail.* **83**(3), 359–370 (2007)
- Berki, E., Georgiadou, E., Siakas K.: A methodology is as strong as the user involvement it supports. In: *International Symposium on Software Engineering in Universities - ISSEU*, 7–9 March 1997, Rovaniemi, pp. 36–51 (1997)
- Boyd, D., Ellison, N.B.: Social network sites: definition, history, and scholarship. *J. Comput. Mediated Commun.* **13**(2), 210–230 (2007)
- Boyer, K.K., Hallowell, R., Roth, A.V.: E-services: operating strategy – a case study. *J. Oper. Manag.* **20**(2), 175–188 (2002)
- Sheriff, M., Georgiadou, E., Abeysinghe, G., Siakas, K.: INCUVA: a meta-framework for sustaining the value of innovation in multi-cultural settings. In: McCaffery, F., O'Connor, R.V., Messnarz, R. (eds.) *EuroSPI 2013. CCIS*, vol. 364, pp. 270–281. Springer, Heidelberg (2013)
- Chesbrough, H.W.: *Open innovation: the new imperative for creating and profiting from technology*. Boston, MA (2003)
- Chesbrough, H.W.: *Open Services Innovation: Rethinking Your Business to Grow and Compete in a New Era*. Jossey-Bass, San Francisco (2011)
- Christensen, C.M., Raynor, M.E.: *The Innovator's Solution*. Harvard Business School Press, Boston (2003)
- Chiaroni, D., Chiesa, V., Frattini, F.: The open innovation journal: how firms dynamically implement emerging innovation management paradigm. *Technovation* **31**(1), 34–43 (2011)
- Dahan, E., Hauser, J.R.: The virtual customer. *J. Prod. Innov. Manag.* **19**(5), 332–353 (2002)
- Dahlander, L., Gann, D.M.: How open is innovation? *Res. Policy* **39**(6), 699–709 (2010)
- de Wit, J., Dankbaar, B., Vissers, G.: Open innovation: the new way of knowledge transfer? *J. Bus. Chem.* **4**(1), 11–19 (2007)
- Ebersberger, B., Bloch, C., Herstad, S., Van de Velde, E.: Open innovation practices and their effect on innovation performance. *Int. J. Innov. Technol. Manag.* **9**(6), 125–140 (2012)

- Enkel, E., Perez-Freije, J., Gassmann, O.: Minimizing market risks through customer integration in new product development: learning from bad practice. *Authors J. Compilation* **14**(4), 425-437 (2005a)
- Enkel, E., Kausch, C., Gassmann, O.: Managing the risk of customer integration. *Eur. Manag. J.* **23**(2), 203–213 (2005b)
- Frankenberger, K., Wiblen, T., Gassman, O.: The antecedents of open business models: an exploratory study of incumbents firms. *R&D Manag.* **44**(2), 173–188 (2014)
- Gassman, O., Enkel, E., Chesbrough, H.: The future of open innovation. *R&D Manag.* **40**(3), 213–221 (2010)
- Gay, B.: Open innovation, networking, and business model dynamics: the two sides. *J. Innov. Entrepreneurship* **3**(2), 1–20 (2014)
- Georgiadou, E., McGuinness, C., Siakas, K., Koukourakis, M., Repanovici, A., Khan, N., Rahanu, H.: A framework for quality management of information literacy projects and the role of ICTS. *International Journal of Human Capital and Information Technology Professionals (IJHCITP)* (2016, in press)
- Georgiadou, E., Siakas, K.: VALO⁵ – innovation, maturity growth, quality and valorisation. In: McCaffery, F., O'Connor, R.V., Messnarz, R. (eds.) *EuroSPI 2013. CCIS*, vol. 364, pp. 294–299. Springer, Heidelberg (2013)
- Gould, R.W.: Open innovation and stakeholder engagement. *J. Technol. Manag. Innov.* **7**(3), 1–11 (2012)
- Gross, R., Acquisti, A.: Information revelation and privacy in online social networks. In: *Proceedings of WPES 2005*, pp. 71–80 (2005)
- Grönroos, C.: Adopting a service business logic in relational business-to-business marketing: value creation, interaction and joint value co-creation. *Otago Forum 2, Academic Papers No. 15*, 8–12 December 2008, University of Otago, Dunedin, New Zealand (2008)
- Haythornthwaite, C.: Social networks and internet connectivity effects. *Inf. Commun. Soc.* **8**(2), 125–147 (2005)
- Heinonen, K., Strandvik, T., Mickelsson, K.-J., Edvardsson, B., Sundström, E., Andersson, P.: A customer-dominant logic of service. *J. Serv. Manag.* **21**(4), 531–548 (2010)
- Herstatt, C., von Hippel, E.: From experience: developing new product concepts via the lead user method: a case study in a “low-tech” field. *J. Prod. Innov. Manag.* **9**(3), 213–221 (1992)
- Huizingh, E.K.R.E.: Open innovation: state of the art and future perspectives. *Technovation* **31**(1), 2–9 (2011)
- Karlström, D., Runeson, P.: Combining agile methods with stage-gate project management. *IEEE Softw.* **22**(3), 43–49 (2005)
- Kim, A.J.: *Community Building on the Web*. Peachpit Press, Berkeley (2000)
- Kozinets, R.V.: On Netnography: initial reflections on consumer research investigations of cyberculture. In: Alba, J.W., Hutchinson, J.W. (eds.) *Advances in Consumer Research*, vol. 25, pp. 366–371, Provo (2002)
- Kujala, S.: User involvement: a review of the benefits and challenges. *Behav. Inf. Technol.* **22**, 1–17 (2003)
- Laursen, K., Salter, A.: Open for innovation: the role of openness in explaining innovation performance among UK manufacturing firms. *Strat. Manag. J.* **27**(2), 131–150 (2006)
- Lengnick-Hall, C.A.: Customer contributions to quality: a different View of the customer-oriented firm. *Acad. Manag. Rev.* **21**(3), 791–824 (1996)
- Lewrick, M., Omar, M., Williams Jr., R.L.: Market orientation and innovators’ success: an exploration of the influence of customer and competitor orientation. *J. Technol. Manag. Innov.* **6**(3), 49–61 (2011)

- Lovelock, C.H., Young, R.F.: Look to customers to increase productivity. *Harv. Bus. Rev.* **57**(3), 168–178 (1979)
- Lukas, B., Ferrell, O.: The effect of market orientation on product innovation. *J. Acad. Mark. Sci.* **28**(2), 239–247 (2000)
- Mahr, D., Rindfleisch, A., Slotegraaf, R.J.: Innovation beyond firm boundaries: the routines and resource investment of successful external problem solvers. In: American Marketing Association Winter Educators' Conference, 19–22 February 2010, New Orleans, LA (2010). <http://ebookbrowse.com/rindfleisch-background-paper-march-2010-pdf-d138594519>. Accessed 2 Mar 2016
- Marks, O.: 3rd party external social media research findings article published by Cisco (2009). <http://www.zdnet.com/blog/collaboration/cisco-2009-3rd-party-external-social-media-research-findings/1289>. (visited 19 Mar 2015)
- Michel, S., Brown, S.W., Gallan, A.S.: Service-logic innovations: how to innovate customers, not products. *Calif. Manag. Rev.* **50**(3), 49–65 (2008)
- Overvik Olsen, T., Welo, T.: Maximizing product innovation through adaptive application of user-centered methods for defining customer value. *J. Technol. Manag. Innov.* **6**(4), 172–191 (2011)
- Prahalad, C.K., Ramaswamy, V.: The co-creation connection. *Strat. Bus.* 114–127 (2002)
- Reffay, C., Chanier, T.: How social network analysis can help to measure cohesion in collaborative distance learning, designing for change in networked learning environments. In: *Proceeding of the International Support for Collaborative Learning*, vol. 3, pp. 343–352 (2003)
- Saebi, T., Foss, N.: Business models for open innovation: matching heterogeneous open innovation strategies with business model dimensions. *Eur. Manag. J.* **33**(3), 201–213 (2014)
- Sanders, E.: Information, inspiration and co-creation. In: 6th International Conference of the European Academy of Design, University of the Arts, Bremen, Germany (2005)
- Savitskaya, I., Salmi, P., Torkkeli, M.: Barriers to open innovation: case China. *J. Technol. Manag. Innov.* **5**(4), 10–21 (2010)
- Schneider, B., Bowen, D.E.: *Winning the Service Game*. Harvard Business School Press, Boston (1995)
- Sharma, S.: Through the lens of managerial interpretations: stakeholder engagement, organisation knowledge and innovation. In: Sharma, S., Aragón-Correa, J.A. (eds.) *Environmental Strategy and Competitive Advantage*, pp. 49–70. Edward Elgar Academic Publishing, Northampton (2005)
- Shostack, G.L.: Understanding services through blueprinting. *Adv. Serv. Mark. Manag.* **1**(1), 75–90 (1992)
- Siakas, K., Kermizidis R., Kontos K.: Using social media in business as a tool for open innovations. In: *Business-Related Scientific Research Conference 2014 (ABSRC 2014)*, 10–12 December 2014, Milan, Italy (2014a)
- Siakas, K.V., Belidis, A., Siakas, E.: Social media marketing for improved branding and valorisation in small family businesses. In: *International Conference on Contemporary Marketing Issues (ICMI 2014)*, 18–20 June 2014, Athens, Greece, pp. 764–772 (2014b). ISBN:978-960-287-145-4
- Siakas, K., Messnarz, R., Georgiadou, E., Naaranoja, M.: Launching innovation in the market requires competences in dissemination and exploitation. In: Winkler, D., O'Connor, R.V., Messnarz, R. (eds.) *EuroSPI 2012. CCIS*, vol. 301, pp. 241–252. Springer, Heidelberg (2012)
- Siakas, K., Siakas, E.: Agile software development in distributed environments. In: *Industrial Stream of the 16th European Software Process Improvement (EuroSPI 2009)*, 2–4 September 2009, Alcalá, Madrid, Spain, pp. 8.19–8.31 (2009)
- Siakas, K., Siakas, E.: The agile professional culture: a source of agile quality. *Softw. Process Improv. Pract. (SPIP) J.* **12**(6), 597–610 (2007). Wiley

- Siakas, K., Siakas, E.: The human factor deployment for improved agile quality. In: Tukianen, M., Messnards, R., Nevalaninen, R., Koining, S. (eds) *European Software Process Improvement and Innovation (EuroSPI 2006)*. International Proceedings Series 6, 11–13 October 2006, Joensuu, Finland, pp. 4.11–4.23, University of Joensuu (2006)
- Siakas K.V., Georgiadou E.: The role of commitment for successful software process improvement and software quality management. In: *The 11th Software Quality Management Conference, SQM2003*, 23–25 April 2003, Glasgow, UK, pp. 101–113 (2003)
- Spiteri, J.M., Dion, P.A.: Customer value, overall satisfaction, end-user loyalty, and market performance in detail intensive industries. *Ind. Mark. Manag.* **33**(2004), 657–687 (2004)
- Straub, T., Kohler, M., Hottum, P., Arrass, V., Welter, D.: Customer integration in service innovation: an exploratory study. *J. Technol. Manag. Innov.* **8**(3), 25–33 (2013)
- Swan, J.E., Oliver, R.L.: Postpurchase communications by consumers. *J. Retail.* **65**(4), 516–533 (1989)
- Tece, D.: Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strat. Manag. J.* **28**(13), 1319–1350 (2007)
- Tidd, J., Bessant, J., Pavitt, K.: *Managing Innovation, Integrating Technological, Market and Organisational Change*, 2nd edn. Wiley, West Sussex (2001)
- Ulwick, A.W.: Turn customer input into innovation. *Harv. Bus. Rev.* **80**(1), 91–97 (2002)
- Van de Ven, A.H., Polley, D.E., Garud, R., Venkataraman, S.: *The Innovation Journey*. Oxford University Press, New York (2008)
- Vargo, S.L., Lusch, R.F.: Evolving to a new dominant logic for marketing. *J. Mark.* **68**, 1–17 (2004)
- Vargo, S.L., Lusch, R.F.: Service-dominant logic: what it is, what it is not, what it might be. In: Lusch, R.F., Vargo, S.L. (eds.) *The Service Dominant Logic of Marketing – Dialog, Debate, and Directions*, pp. 3–28. M.E. Sharpe, Armonk (2006)
- Veryzer, R.W., de Mozota, B.B.: The impact of user-oriented design on new product development: an examination of fundamental relationships. *J. Prod. Innov. Manag.* **22**, 128–143 (2005)
- Wadhaw, A., Bodas-Fritas, I.M., Sarkar, M.B.: The paradox of being open: external technology sourcing and knowledge protection. In: *The Dynamics of Institutions and Markets (DIME) Final Conference*, 6–8 April 2011, Maastricht, Netherlands (2011). http://final.dime-eu.org/files/BodasFreitas_etal_E3.pdf. Accessed 2 Mar 2016
- Weiblen, T.: The open business model: understanding an emergent concept. *J. Multi Bus. Model Innov. Technol.* **2**(1), 35–66 (2014)
- Wynstra, F., Axelsson, B., van der Valk, W.: An application-based classification to understand buyer-supplier interaction in business services. *Int. J. Serv. Ind. Manag.* **17**(5), 474–496 (2006)
- Xue, M., Harker, P.T.: Customer efficiency – concept and its impact on e-business management. *J. Serv. Res.* **4**(4), 253–267 (2002)
- Yamada, A., Kim, T.H.-J., Perrig, A.: Exploiting privacy policy conflicts in online social networks, pp. 1–9, CMU CYlab 12-005 (2012). https://www.cylab.cmu.edu/files/pdfs/tech_reports/CMUCyLab12005.pdf. Visited 20 Mar 2015
- Zeuthaml, V.A., Bitner, M.J.: *Service Marketing: Integrating Customer Focus across the Firm*, 3rd edn. McGrawHill College, Boston (2003)