

# Examining SCRM approach and its role in facilitating tacit knowledge sharing & creation, and exploring its integration effects

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Pradeep Durgam





# Examining SCRM Approach And Its Role In Facilitating Tacit Knowledge Sharing & Creation, And Exploring Its Integration Effects

**Pradeep Durgam**

**Main dissertation advisor**

Professor Matti Rossi, Aalto University School of Business, Helsinki, Finland

**Opponents**

Professor Jari Salo,  
School of Management Studies,  
University of Cape Town, South Africa

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Tacit knowledge resides in a person's mind, which is highly personal and very difficult to interpret & transfer. It can be transferred if individuals reside in the same environment for an extended period of time i.e. through shared experiences. Therefore, finding the right method to acquire tacit knowledge has always been difficult for organizations, as face-to-face interactions or sharing experiences in the same environment is not achievable all the time (due to geographic constraints, lack of mobility, etc.). Over and above that, tacit knowledge sharing through Information Technology (IT) and IT tools is extremely limited or totally impossible. But with the rise of the social web (online collaboration tools, social media, discussion forums, interactive blogs, etc.), tacit knowledge can be created and shared frequently. The main objective of this research is to investigate Social Customer Relationship Management (SCRM) approach and its role in facilitating tacit knowledge sharing & creation and the modification it brings about, due to the integration of social media activities. Based on literature review, in-depth interviews (qualitative approach) and data analysis, this research revisits and explains the concept of SCRM approach, and examines the key enablers required for SCRM approach to exist. Following the above starting point, this research explores if SCRM approach facilitates tacit knowledge creation and if yes, how. To do so, this research adopts Nonaka's 'Dynamic Theory of Organizational Knowledge Conversion & Creation' and investigates if SCRM approach facilitates all the four modes – Socialization, Externalization, Combination, and Internalization – in the SECI model (Micro-Level Analysis) and if yes, how.

This study also examines online collaborative platforms or 'online spaces' implemented under SCRM approach that facilitate tacit knowledge sharing and creation. Simultaneously, this study explores the relationship of online spaces with BA', the shared context for knowledge creation (Micro-Level Analysis). This research adopts 'Mechanism of Co-ordination' to examine the effects of social media on R&D department's structure. It also describes new processes that are integrated within the New Product Development (NPD) process (Meso-Level Analysis).

The integration of SECI model of knowledge creation and BA' in an SCRM setting is useful both to academia and practitioners. This research adds to the existing literature, which believes social media can facilitate tacit knowledge sharing and creation, and also helps practitioners understand the importance of generating customer knowledge through social media rather than relying on historical and transactional data.

**Keywords** Tacit Knowledge, Social Customer Relationship Management (SCRM), Knowledge Creation, Social Media**ISBN (printed)** 978-952-60-6669-1**ISBN (pdf)** 978-952-60-6670-7**ISSN-L** 1799-4934**ISSN (printed)** 1799-4934**ISSN (pdf)** 1799-4942**Location of publisher** Helsinki**Location of printing** Helsinki**Year** 2016**Pages** 200**urn** <http://urn.fi/URN:ISBN:978-952-60-6670-7>



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# List of Original Articles

- I. Durgam, P. (2015). Chapter 17. From Web 2.0 to Social CRM: the place and value. *Managing Emerging Technologies for Socio-Economic Impact*, 354. *E-Book: Managing Emerging Technologies for Socio-Economic Impact*. Cheltenham, UK: Edward Elgar Publishing.
  
- II. Durgam, P., & Sinha, A. (2014). Positive Disruptions Caused by SCRM Activities in the SECI process of Knowledge Creation: Insights from Four Case Studies. *Published in the 27th BLED e-Conference (e-Ecosystems), 2014*.
  
- III. Durgam, P (2014). Online Spaces satisfying BA' as a Shared Context: Insights from Ten Case Studies. *Proceedings of the 37th Information Systems Research Seminar in Scandinavia (IRIS 37), Ringsted, Denmark, 10-13 August*
  
- IV. Pacauskas, D., Durgam, P., & Fomin, V. V. (2014). How Companies Can Modify R&D for Integrating Social Media Activities into New Products Development. *Published in 27th Bled e-Conference (e-Ecosystems)*



# **PART I: SUMMARY**



# 1 Introduction

## 1.1 Background and Motivation

‘We have the power to know more than we can tell’ - that’s how Polanyi (Polanyi, 1966) described tacit knowledge. The main feature of tacit knowledge, amongst others, is that it is difficult to be articulated, documented or formalized (Ikujiro Nonaka, Toyama, & Konno, 2000). Unlike explicit knowledge, which can be expressed, captured and distributed, tacit knowledge is considered to be more of a personalized knowledge deeply rooted in the individual and very hard to formalize (e.g. subjective insights, know-how, specific skills, craft, or profession) (Ambrosini & Bowman, 2001; Hu, 1995; Kogut & Zander, 1992; Spender, 1996). Hence, usually, sharing of tacit knowledge happens in a shared and collaborative environment and it is context specific (Foos, Schum, & Rothenberg, 2006; Ikujiro Nonaka & Takeuchi, 1995).

Moreover, acquiring tacit knowledge from the overall knowledge base is strategically significant for any organization because of its intermittent nature and valuable importance (Barney, 1991). Having said that, tacit knowledge that is hard to acquire helps organizations have a sustainable advantage (Coff, Coff, & Eastvold, 2006). Once specific tacit knowledge is acquired, firms transfer, share and replicate the knowledge to increase its scale (Tsai, 2001) mainly through face-to-face interactions, group meetings and training sessions. As performance and competitive advantage are valuable sections for an organization, tacit knowledge, which is exclusive, improperly mobile and imperfectly replicable (which cannot be substituted), is argued to be of great importance (Ambrosini & Bowman, 2001; Barney, 1991). But to find the right tacit knowledge for sharing (which is unstructured in nature), needs right settings, enticements and proper mechanisms (Allen, 2008; Panahi, Watson, & Partridge, 2013a).

According to the Knowledge Management Systems' (KMS) research, tacit knowledge is acquired through traditional methods such as apprenticeship, face-to-face interaction, pure observation, regular meetings, mentoring, etc. (Alwis & Hartmann, 2008; Holste & Fields, 2010; Joia & Lemos, 2010; Ikujiro Nonaka, Toyama, et al., 2000; Selamat & Choudrie, 2004). However the above methods are no longer viable and cost effective as firms are turning more global. Also, because of lack of efficiency, they are being replaced by electronic means (Alavi & Leidner, 1999; Ardichvili, Page, & Wentling, 2003; Dubé, Bourhis, & Jacob, 2005, 2006; Falconer, 2006; Hara & Hew, 2007; Panahi, Watson, & Partridge, 2012; Wenger & Snyder, 2000). Acquisition of knowledge using traditional methods makes tacit knowledge sharing on a continuous basis very difficult. But advancement in Information Technology (IT) may evolve as a solution for continuous tacit knowledge sharing.

That said, there are scholars who have researched tacit knowledge and its nature, before the advent and during the maturity of social web technologies (online collaborative tools, social media, etc.), and have argued and maintained that tacit knowledge creation & sharing through IT is very difficult or impossible (Flanagin, 2002; Griffith, Sawyer, & Neale, 2003; Haldin-Herrgard, 2000; Hislop, 2002; Johannessen, Olaisen, & Olsen, 2001; Johnson, Lorenz, & Lundvall, 2002; Mohamed, Stankosky, & Murray, 2006). These scholars maintain that tacit knowledge resides in an individual's head and can only be transferred through face-to-face interactions or mutual involvement, and are rigid in considering knowledge as either absolutely tacit or absolutely explicit (Panahi et al., 2013a).

On the other hand there are researchers who have studied Information Communication & Technology (ICT) and documented the possibility of IT and social web technologies facilitating tacit knowledge sharing & creation (Brzozowski, Sandholm, & Hogg, 2009; M.A. Chatti, Klamma, Jarke, & Naeve, 2007; Chennamaneni & Teng, 2011; Huh et al., 2007; Jasimuddin, Kelin, & Connel, 2005; Panahi et al., 2012; Panahi, Watson, & Partridge, 2013b). In fact, Panahi et al. (Panahi et al., 2013a) have highlighted Nonaka's observation (Ikujiro Nonaka, Toyama, et al., 2000) that conversion and creation of knowledge can occur in a 'Virtual Ba' (i.e. virtual space) thereby considering the possibility of tacit knowledge sharing through ICT support. Additionally, tacit knowledge sharing through social web technologies (Sarkiunaite & Kriksciuniene, 2005) provides a platform for improved communication



(Falconer, 2006), sharing, expressing (Selamat & Choudrie, 2004) and exchanging insights (Alavi & Leidner, 2001). It can therefore be gathered that literature, which explore tacit knowledge sharing through IT and social web technologies (Boateng, Mbarika, & Thomas, 2010; Bolisani & Scarso, 1999; Mohamed Amine Chatti, Jarke, & Wilke, 2007; Marwick, 2001; Mason & Rennie, 2007; Nilmanat, 2009; Panahi et al., 2012, 2013a; Paroutis & Saleh, 2009; Razmerita, Kirchner, & Sudzina, 2009; Sandars & Haythornthwaite, 2007; Shang, Li, Wu, & Hou, 2011; Yi, 2006) successfully attempt to support knowledge creation and conversion model, i.e. the SECI Model (Ikujiro Nonaka, 1994). This model includes tacit to tacit (Socialization process), tacit to explicit (Externalization process), explicit to explicit (Combination process) and explicit to tacit (Internalization process) conversion and creation (M.A. Chatti et al., 2007; Lopez-Nicolas & Soto-Acosta, 2010; Marwick, 2001; Panahi et al., 2013a; Sarkiunaite & Kriksciuniene, 2005). Tacit knowledge sharing through ICT is or may not be as effective as face-to-face interactions, but with advancement of technologies and online collaborative tools, the transfer and sharing of tacit knowledge might be enhanced (Marwick, 2001; Stenmark, 2000). The online social interaction, discussion forums and personalized online chatting – in all formal and informal modes – may possibly improve tacit knowledge creation, and support SECI model (Lopez-Nicolas & Soto-Acosta, 2010).

For pro-‘tacit knowledge sharing through ICT’ researchers, knowledge is in a continuum that flows with different degrees of tacitness (Chennamaneni & Teng, 2011; Jasimuddin et al., 2005; Panahi et al., 2013a). They highlight that tacit knowledge sharing can be facilitated by ICT, although the tacitness might not be of highest degree. And here, tacitness might range from low to medium degree and help high degree of tacit knowledge sharing (Panahi et al., 2012, 2013a).

Furthermore, Alton Chua (A. Chua, 2001) (along with Alwis & Hartmann, 2008; Nahapiet & Sumantra, 1998; Oguz & Sengün, 2011; Rai, 2011; Tamer Cavusgil, Calantone, & Zhao, 2003) mentions, while examining the sharing of the type of knowledge, the idea of the degree of tacitness and explicitness is more expressive than the tacit-explicit dichotomy. They emphasize that it is useful to consider tacitness as a variable, up to a point where knowledge can be codified and abstracted. Ambrosini & Bowman (Ambrosini & Bowman, 2001) follow up by saying, between tacit knowledge and explicit knowledge there

resides two other degrees of tacitness - one, tacit skills that can be imperfectly articulated, and second, tacit skill that could be articulated (Refer figure below). Therefore, the degree of tacitness expresses if a specific knowledge type is comprehensible or not. If the knowledge is inclined towards extremely tacit, then that knowledge is difficult to access (Chennamaneni & Teng, 2011). Also, the degree of tacitness might differ from person to person as a particular knowledge might be tacit to one and the same knowledge might be explicit to another (Panahi et al., 2012).

Hislop (Hislop, 2002) along with Tsoukas (Tsoukas, 1996) underline the indivisibility of explicit knowledge and tacit knowledge. They advocate that tacit and explicit knowledge cannot be separated, as they are 'mutually constituted'. They emphasize the non-existence of totally explicit knowledge because all existing knowledge is 'either tacit or rooted in tacit knowledge', implying that explicit knowledge is dependent and held by tacit knowledge, while tacit knowledge owns itself (Alwis & Hartmann, 2008). Therefore, all kinds of knowledge have a tacit dimension to it (Hislop, 2002; Leonard & Sensiper, 1998; Panahi et al., 2013b), and converting it to 'explicit knowledge' denotes that explicit knowledge and tacit knowledge cannot be separated (Clark, 2000; Hislop, 2002).

Hence, Hislop continues to mention that if a tacit element is present in all kinds of knowledge and if that tacit element is difficult to be codified and shared over IT, then the overall explicit knowledge may not be communicated in a proper and sincere way (Hislop, 2002)

Moving ahead in the study of social web technologies facilitating tacit knowledge sharing, Oguz and Sengun (Oguz & Sengün, 2011) distinguish between Polanyi's 'tacit knowing' and 'tacit knowledge' (Table 1). Tacit knowing, emerges from the process of indwelling (Oguz & Sengün, 2011; Panahi et al., 2013b). It involves participation and focused involvement for an extended period of time. It cannot be articulated and thus is not seen as a category of knowledge, but it is present throughout (daily chores, caring, tackling boredom, personal relationships, etc.). Organizational literature on the other hand, describes (Oguz & Sengün, 2011) 'tacit knowledge' as 'knowing-how' (applied way of 'knowing how to do things') (Ryle, 1949). (Ambrosini & Bowman, 2001; Oguz & Sengün, 2011; Panahi et al., 2012, 2013a) define tacit knowledge as a category of knowledge, i.e. tacit vs. explicit

and agree with the thought of the existence of ‘two other degrees of tacitness’ between tacit knowledge and explicit knowledge - one, tacit skills that can be imperfectly articulated, and second, tacit skill that could be articulated (Ambrosini & Bowman, 2001).

A comparison of tacit knowing and tacit knowledge	
Tacit knowing in Polanyi’s view	Tacit knowledge in the organizational literature
Is not a realm of knowledge	Is a knowledge realm
Has an ontological and existential component	Is the opposite of explicit knowledge
Is a process	Can be individual or collective
Is a primary understanding	Refers to knowing how and skills
Is indwelling	Refers to organizational routines and capabilities
Is unconscious	Is contextual
Is inexplicable	Can complement or substitute explicit knowledge
Is not amenable to well-articulated representation	In
<b>Source:</b> (Oguz & Sengün, 2011) <b>Recognized by:</b> (Panahi et al., 2013a)	

**Table 1:** A comparison of tacit knowing and tacit knowledge

The notion of ‘tacit knowledge’ is more relevant and acceptable (than the notion of ‘tacit knowing’) in this research on Social Customer Relationship Management (SCRM) approach, which supports the scant literature investigating tacit knowledge sharing and creation over ICT. For instance, web 2.0 facilitating tacit knowledge creation through collaboration (Boateng et al., 2010), transfer of different kinds of knowledge including tacit knowledge through ICT systems (Bolisani & Scarso, 1999), leveraging web 2.0 for knowledge sharing and learning to enhance individual performance (Mohamed Amine Chatti et al., 2007), showcasing the elusive benefits of technology support for knowledge management (Flanagin, 2002), and the triangulation of organization, team members and IT (Griffith et al., 2003). The literature also includes the difficulties faced during the diffusion of tacit knowledge through technology (Haldin-Herrgard, 2000), and limitation of the role of information technology systems in knowledge sharing (Hislop, 2002). While exploring mismanagement of tacit knowledge, the importance of tacit knowledge and the danger of information technology (Johannessen et al., 2001), codification of tacit knowledge (Johnson et al., 2002), surveying technology for knowledge management and highlighting Nonaka’s organizational knowledge creation framework (Marwick, 2001) are focus

areas, informal learning through web 2.0 technologies and knowledge creation and sharing phenomenon (Mason & Rennie, 2007), pinpointing the strengths and weaknesses of IT in the domain of knowledge management (Mohamed et al., 2006), and image usage and tacit knowledge sharing in online communities (Nilmanat, 2009) are also addressed. Other examples are those that explore the role of social media and social web tools in tacit knowledge transfer (Panahi et al., 2012, 2013a), study key determinants of knowledge sharing and collaboration using web 2.0 technologies (Paroutis & Saleh, 2009), devise ways to enable a new model of personal knowledge management through web 2.0 (Razmerita, 2009), and understand the importance of developing connections between a wide variety of learning resources, containing both codified and tacit knowledge through web 2.0 (Sandars & Haythornthwaite, 2007). Some literature also highlight web 2.0 services that provide different levels of knowledge exploitation and develop a framework for classifying existing service models from a knowledge-creation perspective (Shang et al., 2011), and explore tacit knowledge creation and sharing in online environments (Yi, 2006).

Thus, this research adopts ‘tacit knowledge’ described by the organizational literature rather than ‘tacit knowing’ (high degree of tacitness that cannot be articulated through IT). In this research, based on the above references, tacit knowledge may have low to medium degree of tacitness.

This study - ‘Social Customer Relationship Management (SCRM) approach facilitating tacit knowledge sharing and creation’ - supports the research on ‘tacit knowledge sharing over ICT’. However, the idea of SCRM approach facilitating tacit knowledge sharing and creation hasn’t been examined yet and this study attempts to fill this gap. Although SCRM approach is a powerful methodology through which firms share and create knowledge with their customers to build products and services collectively (Askool & Nakata, 2010; Greenberg, 2010a; Reinhold & Alt, 2013), there is no research on the knowledge creating capacity of SCRM approach and the linkages between SCRM approach and tacit knowledge sharing and creation. This study attempts to showcase that there is a tacit dimension or tacit element present in the knowledge shared and created between a firm and its customer through SCRM approach. Through this research we try to emphasize the capabilities of SCRM to share and create tacit knowledge.

Before delving deeper into the concept of Social Customer Relationship Management (SCRM), it is necessary to mention the way Paul Greenberg (Greenberg, 2010a) describes SCRM:

*‘Social CRM is a philosophy and a business strategy, supported by a technology platform, business rules, processes, and social characteristics, designed to engage the customer in a collaborative conversation in order to provide mutually beneficial value in a trusted and transparent business environment. It’s the company’s response to the customer’s ownership of the conversation’.*

As there are many SCRM definitions based on Paul Greenberg’s original description, this research chooses the original definition, as it is relevant and appropriate for this research. In other words, SCRM approach can be defined as an innovative notion that links social media technology with CRM strategies (Askool & Nakata, 2010; Greenberg, 2010a; Reinhold & Alt, 2013).

Chaim Zins (Zins, 2007) portrays Tom Stonier’s (Stonier, 1983, 1997) description of data, information, knowledge and wisdom. “Data is a series of disconnected facts and observations, which may be transformed to information by analyzing, cross-referring, selecting, sorting, summarizing, or in some way organizing the data. Patterns of information, in turn, can be shaped into a coherent body of knowledge. Knowledge consists of an organized body of information. Such information patterns form the basis for the kinds of insights and judgments, which is called wisdom”. In this research, knowledge is referred to as the knowledge generated through constant interactions between a firm and its customer (i.e. mainly customer knowledge relating to product, brand, market etc.) over social web tools active under SCRM approach.

Social web technologies functioning under SCRM approach generate collective experiential knowledge mainly through informal knowledge sharing (Panahi et al., 2012). It involves social media tools, social networking sites, wikis, online chat applications, interactive blogs and webpages, and various other online collaborative platforms (public and firm specific) (Ang, 2011a; Baird & Parasnis, 2011; Brzozowski et al., 2009; Faase, Helms, & Spruit, 2011; Giannakis-bompolis & Boutsouki, 2014; Kärkkäinen, Janhonen, Jussila, &

Janhonen, 2011; Owyang et al., 2010; Panahi et al., 2012, 2013a; Reinhold & Alt, 2013; Vuori & Okkonen, 2012). SCRM approach plays a crucial role in creating a shared context (a platform to collaborate) and bridging the gap between organizations and its customers (Ang, 2011b; Greenberg, 2010b; Lehmkuhl & Jung, 2013; Reinhold & Alt, 2012; Woodcock, Green, & Starkey, 2011).

The social web technologies implemented under SCRM approach give greater access to organizations to connect with its customers, thereby increasing the knowledge creating capacity of organizations (Boselli, Cesarini, & Mezzananza, 2008; Gillet, Helou, Yu, & Salzmann, 1991; Wagner, Vollmar, & Wagner, 2014). Here, the social web creates a stage for collaboration with customers (existing and new) that goes beyond time and space. This social web has boosted the knowledge creating capacity through its qualities such as, incorporating user-generated content, social networking, methods for wider reach, and multiple ways of communication and its ease of use (Durkin, McGowan, & McKeown, 2013; Hutter, Hautz, Dennhardt, & Füller, 2013). The importance of social web is being recognized now, as the functionality of CRM systems seem to have reached its maximum capacity of obtaining 'accurate' customer knowledge relevant for the organization (Greenberg, 2010b; Saarija, Karjaluoto, & Kuusela, 2013; Stone, 2009; Woodcock et al., 2011; Z. (Justin) Zhang, 2011).

While connecting with customers through CRM systems, firms have kept customers away (Dous, Salomann, Kolbe, & Brenner, 2005; Y. Lin, Su, & Chien, 2006; Zablah, Bellenger, & Johnston, 2004), as with these systems it is possible to learn about the customers but disregard what they know. Understanding collaboration closely can be an excellent source for knowledge acquisition, but this strategy of greater involvement with customers has not been maximized yet. It can be seen as a one-way interaction or where the knowledge is pushed on to the customers (websites, pre-defined survey forms, etc. based on CRM system predictions) instead of acquiring knowledge from them (Ellonen & Kosonen, 2010; Z. (Justin) Zhang, 2011). Looking back, one difference amongst others between CRM and Customer Knowledge Management (CKM) is that CRM's focus is to learn 'about' its customers and CKM's aim is to learn 'from' its customers. But having said that, with the advent of Social Web or Web 2.0, social networking sites now play a crucial role in creating a shared context. They create a platform to collaborate and

bridge the gap between organizations and its customers (Razmerita et al., 2009). The Social Web gives greater access to organizations for connecting with its customers; therefore the knowledge creating capacity is higher (Boselli et al., 2008; Gillet et al., 1991; Wagner et al., 2014). And here, the social web has created a stage for collaboration with customers (existing and new) going beyond time and space.

As the social web involves collective knowledge sharing and creation based on past limited research on ICT and tacit knowledge transfer (against the vast research which states that tacit knowledge cannot be shared and transferred though Information Technology), the knowledge created can contain low to medium degree of tacitness. We notice that social media plays an active part in defining SCRM, where collaborators are not specifically asked to share and create knowledge, rather knowledge is shared and created by its daily usage based on attachment, interest and motivation (A. Y. K. Chua & Banerjee, 2013; A. Y. K. Chua, 2002; Ellonen & Kosonen, 2010; C. Zhang & Zhang, 2005).

Organizations realize that the competency of creating and efficiently utilizing customer knowledge is the vital source for maintaining competitive advantage (Ellonen & Kosonen, 2010; Rollins & Halinen, 2005). Nonaka amongst others, as one of the pioneers of the organizational knowledge creation theory, systematically hands out the starting point on how knowledge is created and knowledge sources spotted (Bennett, 2001; Ikujiro Nonaka & Konno, 1998; Ikujiro Nonaka, Toyama, et al., 2000; Ikujiro Nonaka, von Krogh, & Voelpel, 2006; Ikujiro Nonaka, 1991).

The SECI model (Socialization mode, Externalization mode, Combination mode, Internalization mode) of knowledge creation and the concept of BA' (as the shared context for knowledge creation) depicts how and where organizations create knowledge (Ikujiro Nonaka, Toyama, et al., 2000). The emphasis of SECI model is to create knowledge through knowledge conversion, namely: tacit-tacit, tacit-explicit, explicit-complex explicit, explicit-tacit (Ikujiro Nonaka, Toyoma, & Nagata, 2000). Out of the four modes, three modes (Socialization mode, Externalization mode and Internalization mode) involve tacit knowledge conversion and creation, which is one of the key points of interest for this research. As explicit knowledge can easily be articulated, shared, and documented, the combination mode involving explicit knowledge to explicit knowledge conversion is

straightforward. The SECI model, which has a simple design is extensively accepted in the academic field wherever knowledge creation is touched upon, but it seems like this model is less known to practitioners and the business world.

Aligning SCRM activities with CRM strategy of an organization builds a basis for accumulating customers' thoughts, their objectives and their behaviors (Ang, 2011b; Greenberg, 2010a) with an increasing degree of tacitness (low to medium) (Ambrosini & Bowman, 2001; Panahi et al., 2012, 2013a). With the help of literature gathered on Tacit Knowledge, Tacit Knowledge sharing and creation over ICT, SCRM approach, and CKM, this research establishes that the role of SCRM approach in facilitating tacit knowledge sharing and creation has not been studied in detail. Also, as the research on SCRM approach is in early stages (Ang, 2011b; Baird & Parasnis, 2011; Faase et al., 2011; Reinhold & Alt, 2013), its capability in knowledge creation has not been investigated.

The main contribution of this research is to support and add to the limited existing literature that investigates 'tacit knowledge sharing over ICT & IT' (Boateng et al., 2010; Bolisani & Scarso, 1999; Mohamed Amine Chatti et al., 2007; Flanagan, 2002; Griffith et al., 2003; Haldin-Herrgard, 2000; Hislop, 2002; Johannessen et al., 2001; Johnson et al., 2002; Marwick, 2001; Mason & Rennie, 2007; Mohamed et al., 2006; Nilmanat, 2009; Panahi et al., 2012, 2013a; Paroutis & Saleh, 2009; Razmerita et al., 2009; Sandars & Haythorntwaite, 2007; Shang et al., 2011; Yi, 2006). This research begins by examining past literature to understand tacit knowledge, its creation, sharing and limitations.

Tacit knowledge has been rigidly defined (pure tacit or absolutely tacit) and scholars researching tacit knowledge have further dissected the meaning of tacit knowledge and made it more expressible based on its degree of tacitness (Ambrosini & Bowman, 2001; Chennamaneni & Teng, 2011; Hedesstrom & Whitley, 2000; Hislop, 2002; Oguz & Sengün, 2011; Panahi et al., 2013a; Ryle, 1949; Spender, 1996; Tamer Cavusgil et al., 2003; Tsoukas, 2002; Vygotsky, 1962). Some scholars inclined towards organizational studies have gone further in making a clear distinction between 'tacit knowing' (with high degree of tacitness and hard to articulate) and 'tacit knowledge' (with low to medium degree of tacitness that can be articulated) (Ambrosini & Bowman, 2001; Chennamaneni & Teng, 2011; Hedesstrom & Whitley, 2000; Oguz & Sengün,



2011; Panahi et al., 2012, 2013a). As this research proceeds to examine the literature on IT, ICT and social web, there seems to be a new group of researchers who support IT, ICT and social web's role in facilitating tacit knowledge (organizational perspective) sharing (Boateng et al., 2010; Bolisani & Scarso, 1999; Mohamed Amine Chatti et al., 2007; Flanagan, 2002; Griffith et al., 2003; Haldin-Herrgard, 2000; Hislop, 2002; Johannessen et al., 2001; Johnson et al., 2002; Marwick, 2001; Mason & Rennie, 2007; Mohamed et al., 2006; Nilmanat, 2009; Panahi et al., 2012, 2013a; Paroutis & Saleh, 2009; Razmerita et al., 2009; Sandars & Haythornthwaite, 2007; Shang et al., 2011; Yi, 2006). Therefore, this research with its findings and a fresh concept of SCRM approach supports the idea of tacit knowledge sharing and creation over ICT and IT with low to medium degree of tacitness.

## **1.2 Research Objective & Questions:**

The explicit research question can be communicated as,

*Does SCRM approach facilitate tacit knowledge sharing and creation? If yes, how?*

The main objective of this research is to investigate if SCRM approach facilitates tacit knowledge sharing and creation. Based on the literature review, interviews (qualitative approach) and data analysis, this research starts by revisiting the concept of SCRM approach and examining the key enablers required for SCRM approach to exist. Following the above starting point, this research explores the role of SCRM approach in facilitating tacit knowledge sharing and creation. This study adopts Nonaka's classical SECI model of knowledge conversion & creation and investigates SCRM approach facilitating a) tacit knowledge to tacit knowledge conversion & creation (Socialization mode) b) tacit knowledge to explicit knowledge conversion & creation (Externalization mode) c) explicit knowledge to explicit knowledge conversion & creation (Combination mode) d) explicit knowledge to tacit knowledge conversion & creation (Internalization mode).

The research on SECI model of knowledge creation & conversion also tempts us to explore the concept of BA' (a place or a shared context where knowledge is shared). This study thus examines online collaborative platforms or 'online

spaces' (social media, blogs, online chat applications, various online collaborative platforms, discussion forums, public & firm specific interactive web pages, etc.) implemented under SCRM approach, which facilitates tacit knowledge sharing and creation, and at the same time investigates online spaces that satisfy the requirements of BA' as a shared context. Through the above investigation, this study also explores the role of SCRM approach in assisting organizations to create additional knowledge (i.e. the knowledge creating capacity of an organization).

This study further examines the resultant modifications in the R&D structure due to social media integration within an organization's New Product Development (NPD) processes. Therefore, based on the 'Mechanism of Coordination', this research examines the effects on R&D department's structure, and based on data analysis, presents new processes that are integrated within the NPD process.

The explicit research question '*Does SCRM approach facilitate tacit knowledge sharing and creation? If yes, how?*' can be further dissected into four sub-questions and is described as follows:

- 1) What are the key enablers for the initiation and existence of SCRM approach?
- 2) Does SCRM approach facilitate tacit knowledge creation for new product development? If yes, how?
- 3) Do online spaces implemented under SCRM approach facilitate tacit knowledge creation? If yes, how? What are the different online spaces and collaborative methods functioning under SCRM approach? Do online spaces satisfy BA' as a shared context? If yes, how?
- 4) How do organizations/companies adjust its internal New Product Development (NPD) activities in order to handle collaboration with its customers through social media? How is the structure of R&D department affected? What are the new processes integrated within the existing NPD process?

This research involves a two-pronged analysis i.e. Micro-level analysis and Meso-level analysis. The sub-questions two and three fall under Micro-level analysis and sub-question 4 falls under Meso-level analysis.

### **Micro Level and Meso Level Analysis:**

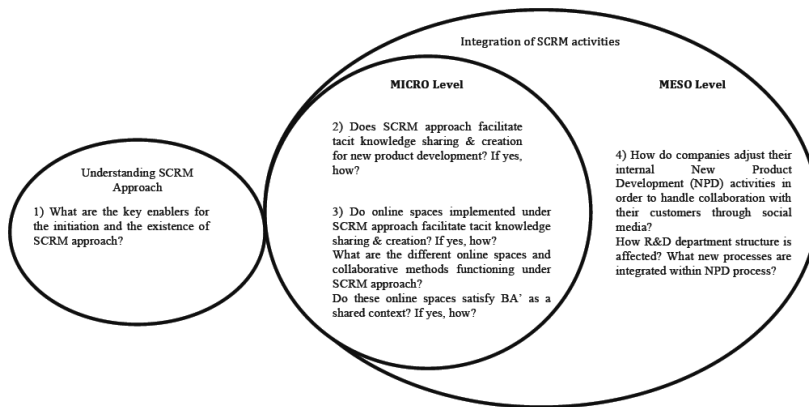
Organizational studies express the need for multi-level analysis i.e. Micro & Meso, as it combines individual level and group level investigations. (Bligh, Pearce, & Kohles, 2006). Also, multi-level analysis helps connect various concepts at different levels (within micro and meso) that have not been associated in the past (Bligh et al., 2006). The analysis at the micro and meso level helps this research understand how the findings at micro level shifts its weight to meso's structure (Werker & Athreye, 2004) thereby benefitting departments (and individuals working in those departments) that operate at the meso-level (Morosini, 2004). Therefore, this research adapts multi-level analysis benefits both at the academic and the practitioner level.

This research refers to micro-level or individual level, when knowledge within a context is exchanged and shared between two or more individuals (Chandler & Vargo, 2011). This context can be related to products and services e.g. service-to-service where customer gives a feedback (a service to the firm) about a particular product or service and subsequently the firm responds (service to the customer) to the customer's feedback appropriately (Chandler & Vargo, 2011). This provides an opportunity for the firm to acquire tacit knowledge. Therefore, both individuals serving each other in the exchange process help in value co-creation. However, at the meso level there is an indirect service-to-service exchange among departments (Chandler & Vargo, 2011). In most cases, the individuals involved in micro-level analysis are involved in the meso-analysis as well (Groen, 2005).

The potency of meso level depends on the department's capabilities, which result in greater collective levels of trust and commitment in teams where team members comfortably collaborate in various processes (Bligh et al., 2006). Morosini (Morosini, 2004) advocates that a well-developed co-ordination mechanism at the meso level has higher level of co-operation between departments. At the meso level, this research explains, that departments are semi-independent from each other and develop online social networks for knowledge diffusion. Departments aim to synchronize diffusion

of knowledge at micro level with meso level to foster product innovation and creativity (Hannah & Lester, 2009).

Therefore, to have a rich field of emergent knowledge (possibility of creating tacit knowledge), first the knowledge creation at the micro level (individual level) has to be stimulated and then later distributed at the meso-level (department level) (Figure 1). Hence the development of collaborative capabilities depends upon the alignment of micro level structure with meso level structure (D'Amour & Oandasan, 2005).



**Figure 1: Research Setting**

The explicit research question is as follows:

*Does SCRM approach facilitate tacit knowledge sharing and creation? If yes, how?*

- 1) What are the key enablers for the initiation and the existence of SCRM approach?  
(Paper 1)

### **Micro Level Analysis**

Does SCRM approach facilitate tacit knowledge sharing & creation for new product development? If yes, how?

(Paper 2)

Do online spaces implemented under SCRM approach facilitate tacit knowledge creation? If yes, how? What are the different online spaces and

collaborative methods functioning under SCRM approach? Do online spaces satisfy BA' as a shared context? If yes, how?

(Paper 3)

### **Meso Level Analysis**

How do organizations/companies adjust its internal New Product Development (NPD) activities in order to handle collaboration with its customers through social media? How is the structure of R&D department affected? What are the new processes integrated within the existing NPD process?

(Paper 4)

With the help of four papers, this research highlights the importance of social web and the level of interaction signifying the emerging aspect of SCRM approach. It revisits SCRM approach, a novel concept, which plays an important role in knowledge sharing and creation, thereby facilitating tacit knowledge creation and sharing.

This research starts by describing the fundamental elements needed for the existence of SCRM, discusses the blending of the features of Web 2.0 with the existing strategic CRM, and explains why Social CRM should be included as one of the main pillars of CRM strategy. For the practitioner level, this study re-emphasizes customer centricity and reiterates that the activities under SCRM approach are major sources for organizational knowledge creation, which occurs due to continuous dialogue between tacit and explicit knowledge.

This study proceeds to examine the process of knowledge creation, by revisiting Nonaka-Takeuchi's SECI model and investigates 1) the role of SCRM activities in tacit knowledge creation and 2) the online spaces facilitating tacit knowledge creation. Taking it further, this research explores the changes in R&D structure, when SCRM activities are integrated with the conventional product development processes. This research examines various firms, in the consumer products and insurance sector, as case studies.



## 2 Positioning of the study

This research is positioned within the existing key literature of tacit knowledge, tacit knowledge sharing over ICT, dynamic theory of organizational knowledge creation i.e. the SECI Model & BA', SCRM approach, and the online co-creation of customer knowledge. This section presents the literature review and positions this research with them.

### 2.1 The dissection of the meaning of tacit knowledge

This research is structured around the notion of tacit knowledge because of its characteristics. Due to the latent feature, tacit knowledge is difficult to be shared, communicated and codified and therefore is of great interest for this study. This research starts by investigating the meaning of tacit knowledge expressed by various tacit knowledge researchers and the degree of tacitness. Based on that understanding, this study revisits the role of tacit knowledge in the SECI model of knowledge creation. Later, keeping tacit knowledge, its meaning, the degree of tacitness and SECI model in mind this research investigates tacit knowledge sharing over ICT, modifications for integrating tacit knowledge into current systems, and later progresses towards the examination of SCRM, online platforms (online spaces), and customer knowledge creation.

There are two main types of knowledge, namely, explicit knowledge and tacit knowledge. Explicit knowledge can be articulated in a formal and organized way and can be articulated in various forms (such as formulae, specifications, manuals, etc.) (Ikujiro Nonaka, Toyama, et al., 2000). On the other hand, tacit knowledge ('we know more than we can tell', (Polanyi, 1966)) is a type of knowledge that is more personalized, inclined to be subjective in nature, inexpressible, and involves physical & cognitive frameworks (Hislop, 2002; Ikujiro Nonaka, Toyama, et al., 2000).

Michael Polanyi (personal knowledge 1958) defines tacit knowledge as personalized knowledge connecting 'tacit knowledge' to actual 'tacit knowing'. He stresses that tacit knowing is extremely innate and flows out in the 'doing', / 'indwelling' for an extended period and when there is a passionate involvement. In tacit knowing, we do things in our daily lives without knowing and not being able to articulate it to others. Polanyi relates tacit knowing to skills and states observation (observing a set of rules) as the key for gaining certain skills, but the set of rules is not known to the person following them.

One of the influential examples he mentions is riding a bicycle. He argues that an individual does not require the understanding of the physics of motion or balance in order to master the skills of riding his/her bike. The individual learns to ride by observation - following basic rules (e.g. sitting upright, holding the handle in a steady manner, sitting on the saddle and balancing with the help of his/her feet, knowing that if somebody holds the cycle from behind, it will help him/her learn quickly, etc.). A second example would be of a swimmer, who does not know about the physics of being afloat, buoyancy, the precise exhaling and inhaling mechanism, and air retention. For Polanyi, all kinds of knowledge have a tacit component and the tacit cooperates with the explicit (the personal with the formal).

Nonaka popularized the concept of tacit knowledge through his SECI model (Ikujiro Nonaka, Toyama, et al., 2000) of knowledge creation where knowledge is created through the knowledge conversion process between tacit to tacit (Socialization mode), tacit to explicit (Externalization mode), explicit to explicit (Combination mode), explicit to tacit (Internalization mode).

Tsoukas (Tsoukas, 2002) analyzes Nonaka's description of tacit knowledge gained through apprenticeship and relates tacit knowledge to 'practical knowledge' (Oakeshott, 1992) and to the definition of 'knowing how' (Ryle, 1949). They argue that apprenticeship is another mechanism of transferring knowledge and is no different from learning through reading manuals. Both the cases differ in knowledge acquisition but involve articulation and formulation of the rules leading to the same outcome. Tsoukas (Tsoukas, 2002) goes on to explain that treating tacit knowledge or practical knowledge as 'a precisely definable content' located in the individuals head and subsequently translating (Ikujiro Nonaka & Takeuchi, 1995) it into explicit



knowledge is erroneous, as this reduces the meaning of articulation, demeaning the idea of practical knowledge.

Spender (Spender, 1996) complements Tsoukas point and addresses tacit knowledge as practical knowledge. He terms Polanyi's sketchy analysis of tacit knowledge as unclear. For Spender, tacit denotes knowledge that is 'not yet explained'. It does not mean knowledge that 'cannot be codified'. He associates 'tacit knowledge' with 'automatic knowledge'. Spender also presents Vygotsky's (Vygotsky, 1962) argument that activities shape the consciousness, which is social in nature. This is against Polanyi's premise that activities through 'indwelling' generates tacit knowledge, which is private in nature.

Another description states that tacit knowledge is enabled in a group, and not at an individual's level. (Hedesstrom & Whitley, 2000). Spender (Spender, 1996) also mentions a valid contradiction in Polanyi's definition of tacit knowledge. On one hand, Polanyi argues that tacit is a fundamental intellectual grounding for all scientific work (Spender, 1996), but on the other, Polanyi also says bicycle riders can demonstrate the riding skills but cannot explain the mechanism. Polanyi further divides organizational knowledge into objective knowledge and tacit knowledge. Here the tacit knowledge is contained in - the conscious (individual), the automatic (individual), and the collective (social) (Table 2). For an organization, the competitive advantage depends on the three kinds of knowledge and not on the objective knowledge (Oguz & Sengün, 2011). Oguz and Sengun (Oguz & Sengün, 2011) conclude (Hedesstrom & Whitley, 2000) that tacit knowledge and explicit knowledge complement each other but are not substitutes.

	<i>Individual</i>	<i>Social</i>
<i>Explicit</i>	Conscious	Objectified
<i>Tacit</i>	Automatic	Collective

**Table 2:** Types of Organizational Knowledge (Spender, 1996)

Ray (Ray, 2008) highlights Tsoukas's analysis of tacit knowledge and points out contradiction between 1) Nonaka's externalization mode (tacit-explicit) in

the SECI Model, which enables people to express their ‘tacit knowing’ or ‘tacit knowledge’ and 2) Polanyi’s argument of tacit knowledge that cannot be articulated, codified and is inexpressible. Based on this contradiction, Tim Ray finds the tacit-explicit knowledge conversion impractical.

Arthur Reber (Reber, 1989) mentions that tacit knowledge, abstract in nature and representing the structure of the environment, is produced by implicit learning. He states, tacit knowledge that is optimally obtained and free from the conscious effort to learn, can be utilized for problem-solving and accurate decision-making.

Gilbert Ryle (Ryle, 1949) prefers ‘knowing-how’ than the concept of ‘tacit knowing’ defined by Polanyi. Ryle perceives knowledge in a continuum, where at one end is ‘tacit knowledge’ and on the other is ‘explicit knowledge’. Oguz & Sengün (Oguz & Sengün, 2011) argue Ryle’s ‘knowing-how’ is closer to the meaning of ‘tacit knowledge’ extensively referred in the organizational and knowledge management studies (Panahi et al., 2013a) FIGURE 3. With respect to organizational knowledge creation, ‘knowledge’ and ‘knowing’ facilitate each other filling the gap between practical knowledge and tacit knowing (Cook & Brown, 1999; Oguz & Sengün, 2011).

This research considers ‘tacit knowledge’ as referred to by the organizational and knowledge management studies rather than Polanyi’s rigid concept of ‘tacit knowing’. Panahi suggests, not to regard tacit knowledge as a binary digit (0 or 1), absolutely tacit or absolutely explicit, or as pure tacit or pure explicit (Hislop, 2002; Johannessen et al., 2001; Mohamed et al., 2006; Panahi et al., 2013a). Also, tacit knowing with high degree of tacitness cannot be easily accessed and articulated; moreover it has been considered impossible to share tacit knowledge over ICT. Crane and Bontis (Crane & Bontis, 2014) suggest a ‘tacit knowledge’ label instead of ‘tacit knowing’ since tacit knowledge is action orientated and more influential in nature. So, this research adopts the term ‘tacit knowledge’ while studying ‘The role of SCRM approach in facilitating tacit knowledge sharing and creation’.

## **2.2 The Degree of Tacitness**

The degree of tacitness is of great importance for this research, as tacit knowledge cannot be observed as absolutely tacit or absolutely explicit. Also,

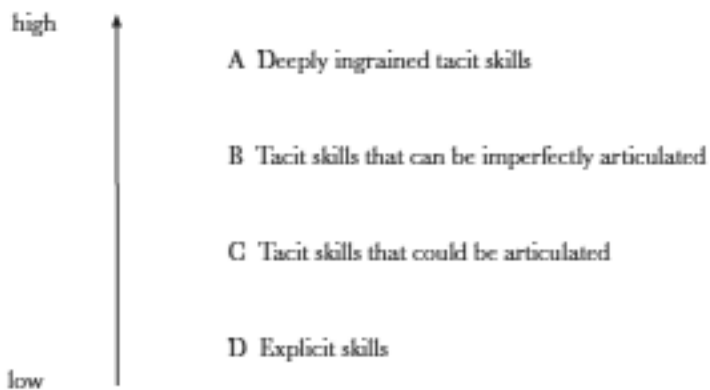
the degree of tacitness and the degree of explicitness is more meaningful than the tacit and explicit dichotomy.

There is a degree of tacitness within 'pure tacit skills' that keeps varying between most tacit and explicit even though tacit skills are innate and cannot be transmitted easily through knowledge and task performances (J. R. Howells, 2002). Cavusgil et.al (Tamer Cavusgil et al., 2003) propose a degree of tacitness with respect to knowledge on an organizational level and state that the types of knowledge should be categorized in a continuum, ranging from explicit to tacit. So if the knowledge is closer to extremely tacit, the more difficult it is to access (Chennamaneni & Teng, 2011). Close collaboration is the key for obtaining high degree of tacit knowledge, as close collaboration and the degree of tacitness are interdependent (Tamer Cavusgil et al., 2003). Tacitness can also be regarded as a variable where degree of tacitness is a function of the extent to which knowledge can be abstracted (Nahapiet & Ghoshal, 1998; Rahimi, Seyyedi, & Damirchi, 2012).

Skills having low degree of tacitness can be acquired explicitly, but it must be noted that those skills can obtain high level of tacitness over a period of extensive usage (Chennamaneni & Teng, 2011). Apprenticeship for example is enough for attaining low degree of tacitness. Skills that involve higher degree of tacitness are extremely personalized and cannot be used for introspection (Ambrosini & Bowman, 2001; Chennamaneni & Teng, 2011). In this case, even if the articulation is attempted, it will be imperfect and also the fertility of the message is lost during the articulation process (Chennamaneni & Teng, 2011). High degree of tacitness is acquired and articulated during passionate observations or face-to face interactions amongst others (Ikujiro Nonaka, Toyama, et al., 2000). Medium degree of tacitness can be articulated through process mapping, fishbone, prototype, brainstorming, etc. and low degree of tacitness can be acquired explicitly and easily transferred internally within an organization (e.g. asking the right questions, structured expert interviews, learning by trial & error) (Chennamaneni & Teng, 2011). With the support of proper knowledge management procedures, most tacit skills (with the exception of high degree tacitness) such as creativity, innovation and entrepreneurship can be articulated (Chennamaneni & Teng, 2011).

Ambrosini (Ambrosini & Bowman, 2001) explains that tacit skills involve a collection of diverse degree of tacitness. To begin with, he mentions two

anchor points, namely, ‘explicit skills’ (Level D in Figure 2) on one end and ‘tacit skills’ (most tacit) on the other. And between these two points lie two other degrees of tacitness. At one degree of tacitness there are tacit skills (Level C in the Figure 2), which are unarticulated but can be articulated willingly by the members of an organization if they are asked the right questions (e.g. how to do that? what is being done? etc). So at this degree of tacitness, tacit skills are tacit but have been explicitly obtained and transformed into tacit over a period of time. On the second degree of tacitness (Level B in the Figure 2) tacit skills can be accessed but not expressible with the regular and standard usage of words. This degree of tacitness involves imperfectly articulated tacit skills with the help of metaphors and storytelling. Based on these two degrees of tacitness (B & C), operationalizing tacit skills is viable and can be realistic when compared to the tacit skills with highest degree of tacitness (most tacit), which is improbable to be operationalized due to its latent nature (Level A in the Figure 2).



**Figure 2:** The Degree of Tacitness (Ambrosini & Bowman, 2001)

This research considers the two degrees of tacitness (B & C) along with explicit skills (D), which lies in between tacit skills (most tacit) and explicit skills.

### **2.3 Modifications for integrating tacit knowledge**

Tacit knowledge is present 1) at the individual level (skills, habits and abstract knowledge, etc.), 2) at the departmental level, where team members collectively hold tacit knowledge (best practices, top management schemes,

past collaborative experiences, etc.) and also 3) at the organizational level combining all departments (organizational routines, culture, etc.) (Cavusgil, Calantone, & Zhao, 2003; Ikujiro Nonaka & Takeuchi, 1995; Spender, 1996). Hence for obtaining tacit knowledge, organizations integrate various procedures including knowledge management practices in order to have a sustainable competitive advantage.

Goffin & Koners (Goffin, Koners, Baxter, & Hoven, 2010; Goffin & Koners, 2011) suggest managers to include tacit knowledge to coach less experienced NPD teams to deal with budgets, problem solving and product specification issues. They (Goffin et al., 2010; Goffin & Koners, 2011) mention that documenting NPD success and failure stories encourages tacit knowledge sharing & creation, providing R&D managers a chance to make NPD teams more effective. They (Goffin et al., 2010; Goffin & Koners, 2011) propose creating a space for networking and informal interactions, and integrating post project reviews with other mechanisms (recognize people as tacit knowledge sources, develop new codification schemes, assign knowledge brokers, stimulate knowledge flow between teams, metaphors, etc.) to support sharing & creation of tacit knowledge. Moreover, R&D managers combine pre-transfer and knowledge preparation procedures to make tacit knowledge more internally manageable through conversion (Cummings & Teng, 2003).

Interlinking cross-functional teams is advocated for obtaining collective tacit knowledge. Tacit knowledge is not efficient when members of the team hold them up individually (Madhavan & Grover, 1998). In a New Product Development teams (NPD) context, Madhavan and Grover point out that the distributed systems is modified by bringing together a new cross-functional team for tacit knowledge acquisition. Team members interact with each other in a spiral-like collaborative fashion in turn affecting 1) the nature of the joint distributed system, 2) their cognition and their participation and 3) finally altering the joint performances and products. They (Madhavan & Grover, 1998) state that the NPD possess embedded knowledge (tacit knowledge) and the new product is therefore the embodied knowledge (result of the embedded knowledge). Hence, the main task of managers is to manage the transition from embedded knowledge to embodied knowledge. They (Madhavan & Grover, 1998) specify to include T-shaped skills (broad skill set but very specific) e.g. richly experienced professional and A-shaped skills (multiple skill set and highly experienced in multiple fields) e.g. Managers, for achieving high

success rate in NPD. The integration of NPD routines is an important mechanism, as NPD routines contain a large tacit element fundamentally secured to an individual. NPD routines include members from past NPD projects, mentors and experts to transfer knowledge and best practices to novice NPD teams (Madhavan & Grover, 1998).

NPD being a knowledge-intensive activity involves cross-functional associations because cumulative knowledge about strategic design, and methodology for designing is predominantly tacit in nature (Ramesh & Tiwana, 1999). Ramesh & Tiwana identify that this tacit knowledge includes general knowledge, domain specific knowledge and procedural knowledge for completing a task. With the help of knowledge management procedures, it is also appropriate to involve customers and suppliers in the NPD process to understand their practice and culture (Madhavan & Grover, 1998) and at the same time leverage their experience, know-hows and judgments that reside outside the boundaries of the firm (Ramesh & Tiwana, 1999). Ramesh and Tiwana stress on implementing knowledge management initiatives for obtaining tacit knowledge, further mobilizing and converting it to explicit knowledge and then distributing it across the firm. As a part of knowledge management strategies, they (Ramesh & Tiwana, 1999) suggest deploying codification techniques (use of technology for reuse of knowledge) and personalization techniques (connecting people to share tacit knowledge).

Through six sigma execution methodology, Anand et.al (Anand, Ward, & Tatikonda, 2010) indicate including explorative objectives (increasing customer satisfaction, improving supplier relationship, 'five-why' analysis) for sharing and seizing tacit knowledge from project team members. Anand et.al suggest that firms should use Nonaka's socialization and externalization mechanism for idea generation and codify tacit knowledge into explicit knowledge. Additionally, organizations also use four other mechanisms - rules and directive mechanism to convert tacit to explicit knowledge, sequencing mechanism for controlling the interaction, routine mechanism for including best practices, and group problem solving mechanisms – to leverage individual tacit knowledge for task completion and decision making processes (Grant, 1996b; Sarin & Mcdermott, 2003).

Grant (Grant, 1996a) provides two integration mechanisms to include tacit knowledge. 'Direction mechanism' in which knowledge can be articulated at

low cost between experts and non-experts and 'organizational routines', in which tacit knowledge can be codified into explicit knowledge. Bloodgood & Salisbury (Bloodgood & Salisbury, 2001) express that depending upon the importance of tacit knowledge, firms will either 1) reconfigure their strategy with existing and new resources, or 2) will only acquire (no reconfiguration) new resources or 3) will maintain business as usual (giving no importance to tacit knowledge).

From an innovation point of view, social grouping is deployed for integrating tacit knowledge sharing between market researcher, project leaders and team members for breakthrough innovation (Mascitelli, 2000). Also, 'communities of practice' strategy can be included to provide sharing and solving of problems via a group of people. This tacit exchange fosters innovation, creates tools and generic designs, or simply enables 'cross-pollination' of ideas. Furthermore, tacit knowledge can fill knowledge gaps for firms and increase competencies (Hoegl & Schulze, 2005). For group innovation, according to Leonard & Spender (Leonard & Sensiper, 1998), three different types of knowledge need to be managed, namely, the overlapping specific knowledge (combined knowledge gained through apprenticeship and shared experience), the collective systemic knowledge (knowledge about an entire system or process within the firm specific to individuals using those systems) and the guiding tacit knowledge (to guide all individuals involved in the innovation process towards the same direction).

Information technology plays a crucial role along with other innovative organizational procedures in creating customer knowledge and aiding distributed innovation that can have a high tacit element (Nambisan, 2002). Nambisan argues to include customers through virtual customer communities into new product development phase 'as a resource' and 'as a co-creator' for tacit knowledge acquisition and conversion. Furthermore, he also suggests providing customers with other NPD roles such as a product tester and a product support for explicit knowledge acquisition and conversion. He stresses that customer involvement allows customers and the customer communities to make multiple interpretations about a given product, eventually increasing customer innovation. Subsequently these tacit interpretations are made explicit to be utilized by other internal NPD teams (Nambisan, 2002)..

Verona et.al. (Verona, Prandelli, & Sawhney, 2006) propose the concept of virtual knowledge brokers as actors who maintain their own virtual environment for personalized customer collaboration. They add that tacit knowledge is present in the virtual space because people involved in the collaboration generate ideas, feelings, opinions and find solutions to problems. That is to say, higher the capability to codify, higher, the capability of virtual knowledge brokers to acquire tacit knowledge. Nambisan and Baron (Nambisan & Baron, 2007) advocate the inclusion of virtual customer environment and involvement of customers in innovation and value creation. They highlight that the online product forums nurture customers' participation for product support activities. In order to increase and understand customer participation in virtual customer environment, the focus needs to be shifted from the outcome to value co-creation itself. Also, the virtual environments steadily increase the firm's capacity to tap into the social dimensions of customer knowledge (Sawhney, Verona, & Prandelli, 2005). Hoyer et.al. (Hoyer, Chandy, Dorotic, Krafft, & Singh, 2010) recommend the use of web technologies for effective customer co-creation, increase the depth of feedbacks and inputs at a lower cost, and decrease the failure rate.

## **2.4 Tacit knowledge sharing and creation over ICT**

While understanding the nature and the characteristics of tacit knowledge, it is crucial to examine the ICT facilitation of tacit knowledge sharing and creation. And this examination will increase the strength of the study and guide this research to fill the gap.

Before and during the development of ICT, 'Tacit knowledge' researchers followed Polanyi and Nonaka's rigid definition that tacit knowledge resides in an individual's head making it difficult or impossible to be shared easily (or to be documented for instance.) (Flanagin, 2002; Griffith et al., 2003; Hislop, 2002; Johannessen et al., 2001; Johnson et al., 2002). In order to share tacit knowledge, focused 'indwelling', observation, passionate involvement and close interaction for an extended period of time is needed. The communication of tacit knowledge cannot be codified and done directly as it requires direct experience (Gourlay, 2006; Haldin-Herrgard, 2000; J. R. L. Howells, 2002; Mahroeian & Forozia, 2012; Mohamed et al., 2006; Ikujiro Nonaka, Toyoma, et al., 2000; Roberts, 2000). Howells (J. R. Howells, 2002) also mentions that tacit knowledge signifies personal disembodied know-how that is obtained



through the observation of behavior and procedures. Also, as tacit knowledge is more within the personalized context, it is not even suitable for knowledge management technologies (Roberts, 2000). Hence, technological advancements cannot replace face-to-face interactions. But face-to-face interactions are the prerequisite for tacit knowledge transfer (Roberts, 2000). Because of its very nature and a general consensus on characteristics of tacit knowledge, it becomes difficult if not impossible to share tacit knowledge through ICT (Hislop, 2002) or even digitalize it (Johannessen et al., 2001).

Haldin-Herrgard (Haldin-Herrgard, 2000) mentions that information technology can facilitate explicit knowledge, but it's hard to diffuse tacit knowledge through technology. Flanagin (Flanagin, 2002) argues that technological advances to support tacit knowledge sharing is regarded as problematic. The acquisition of tacit knowledge depends on situational experiences, social context, cultural context and shared experiences and therefore cannot be shared and transferred through communication and information technologies (Roberts, 2000). Roberts says technologies are for transferring highly codified and standardized knowledge, which falls under the realm of explicit knowledge.

While Johannessen (Johannessen et al., 2001) argues about the mismanagement of tacit knowledge due to information technology and explains that investment in IT will help formalize the knowledge base of the organization, he de-emphasizes tacit knowledge sharing and creation, even though it is the tacit knowledge that determines the (sustainable) competitive advantage for an organization in an unstable market (Ikujiro Nonaka & Takeuchi, 1995; Spender, 1996). He stresses that organizations will stand to lose if they invest in IT and do not emphasize on the entire knowledge base, which includes the crucial tacit knowledge. Concurrently, he explicitly mentions the under-researched topic of the influence of IT on tacit knowledge and vice-versa.

Johnson (Johnson et al., 2002) clarifies that 'know-how' cannot be transformed into explicit knowledge through IT. Furthermore he says it is expensive to transform 'expert knowledge' with the help of IT and make it available to others. He mentions that in the process of transforming tacit knowledge through IT, there is a direct loss of tacit knowledge, as tacit knowledge never gets codified and in the bargain becomes inactive.

Trust also plays an important role in the transfer of tacit knowledge and it is a key deterrent in the ICT mechanism to effectively transfer tacit knowledge (Roberts, 2000). But it is not in the case of face-to-face interactions; trust grows as the indwelling increases with time.

Researchers who have examined the influence of ICT on tacit knowledge sharing and vice-versa highlight that ICT can facilitate tacit knowledge sharing (Brzozowski et al., 2009; M.A. Chatti et al., 2007; Chennamaneni & Teng, 2011; Huh et al., 2007; Jasimuddin et al., 2005; Panahi et al., 2012, 2013b). They form this opinion on the basis of 'Degree of Tacitness' as tacit knowledge cannot be regarded as absolutely tacit or pure tacit. The degree of tacitness has further dissected the meaning of tacit knowledge and made it more expressible (Ambrosini & Bowman, 2001; Chennamaneni & Teng, 2011; Hedesstrom & Whitley, 2000; Hislop, 2002; Oguz & Sengün, 2011; Panahi et al., 2013a; Ryle, 1949; Spender, 1996; Tamer Cavusgil et al., 2003; Tsoukas, 2002; Vygotsky, 1962).

For pro 'Tacit Knowledge-ICT' researchers, knowledge is in a continuum that flows with different degrees of tacitness (Chennamaneni & Teng, 2011; Jasimuddin et al., 2005; Panahi et al., 2013a). They highlight that tacit knowledge sharing can be facilitated by IT, although the tacitness might not be of highest degree. Here the tacitness might range from low to medium degree and help attain high degree of tacit knowledge sharing (Panahi et al., 2012, 2013a). In fact, Panahi et al. (Panahi et al., 2013a) have pointed out Nonaka's observation (Ikujiro Nonaka, Toyama, et al., 2000), that knowledge conversion and creation of knowledge can occur in a 'Virtual Ba' (i.e. virtual space), considering the possibility of tacit knowledge sharing through ICT support. Additionally, tacit knowledge sharing through IT with social web technologies (Sarkiuonaite & Kriksciuniene, 2005) provides a platform for better communication (Falconer, 2006), sharing, expressing (Selamat & Choudrie, 2004) and exchanging insights (Alavi & Leidner, 2001). Marwick mentions that tacit knowledge sharing though ICT is not as effective as face-to-face interactions, but advancement of technology and the online collaborative tools will enhance the transfer and sharing of tacit knowledge from what it was in the past (Marwick, 2001; Stenmark, 2000).

Flanagin (Flanagin, 2002) agrees that advanced technologies of the future will have the capacity to facilitate tacit knowledge sharing. Social web tools (Panahi et al., 2012, 2013a) can provide a mode for intense social interaction for a substantial amount of time in order to acquire highly tacit knowledge (Brown & Duguid, 1998; Hislop, 2002; Kogut & Zander, 1992; Lam, 1997; Leonard & Sensiper, 1998). Joanne (Roberts, 2000) discusses the importance of development of a 'Shared Space' –a virtual world and argues that the deployment of a shared virtual location must be established through ICT, along with regular face-to-face interactions, for tacit knowledge sharing and transfer.

Panahi et.al (Panahi et al., 2012, 2013a) reinstate the role of IT tools in assisting tacit knowledge sharing with low to medium degree of tacitness supporting various tacit-explicit conversions & creations (Ikujiro Nonaka, Toyama, et al., 2000) and tacit knowledge sharing with high degree of tacitness. Chennamaneni & Teng (Chennamaneni & Teng, 2011) advocate that web 2.0 technologies - process of collaboration, exchange of common knowledge between parties, sharing experiences & unstructured messages and focused feedback - can help tacit knowledge transfer with high degree of tacitness. They also believe online chats can help transfer tacit knowledge with medium degree of tacitness. The use of existing technologies (web 2.0) with high bandwidth is preferred for tacit knowledge sharing with low degree of tacitness to help overcome time, costs and distance (Chennamaneni & Teng, 2011; Panahi et al., 2013a).

Hislop (Hislop, 2002) stresses that the degree of tacitness is the most important factor that can impact tacit knowledge sharing assisted by IT. There is no such thing as 'fully explicit' or 'fully tacit' and therefore IT tools can be useful for tacit knowledge sharing, which has a significant element of explicitness (Hislop, 2002). Hislop emphasizes that if tacit element is present in all knowledge and that tacit knowledge is difficult to be codified and shared over IT then in that case explicit knowledge might not be communicated in a proper and sincere way. He mentions that tacit knowledge can also be regarded as collective in nature as it is rooted in the social and cultural context and IT tools can play a role in extracting this collective and common knowledge.

Gertler (Gertler, 2003) underlines the merits of innovative technologies. He states that with the help of IT tools, users provide tacit knowledge to producers to develop innovative solutions towards users practical problems and in turn, the producers also share tacit knowledge (knowledge about products and services) with their customers. Therefore the end product that embodies tacit knowledge is built with the close collaboration of users and producers. He describes this process as ‘a social process of joint innovation and tacit knowledge production’

## 2.5 ICT adoption towards the four modes of the SECI model

Explaining further and touching upon the SECI process, the creation of knowledge within a firm happens due to the constant interaction between tacit knowledge and explicit knowledge (Ikujiro Nonaka, Byosiere, Borucki, & Konno, 1994). These interactions can be termed as SECI process that has four modes of knowledge conversion. Due to this conversion process there is knowledge expansion, which is more refined and relevant.

The four modes of knowledge conversion (Figure 3) are:

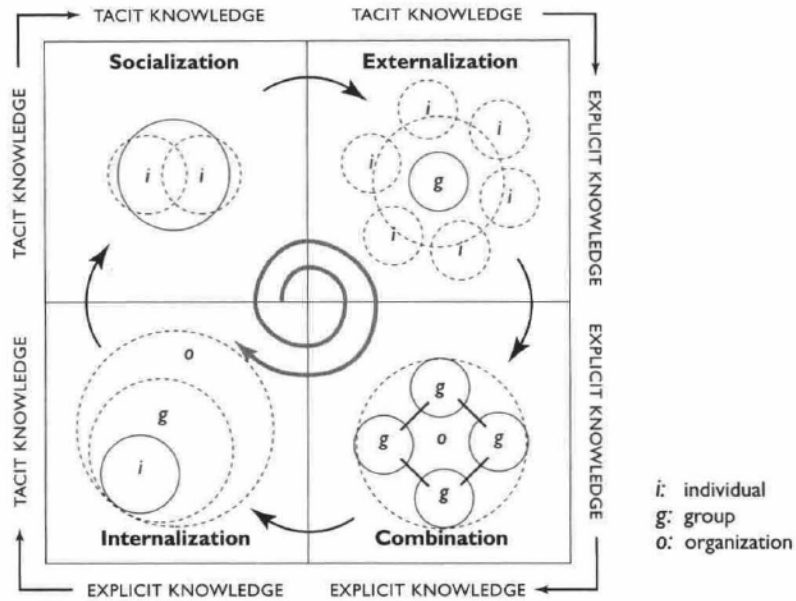
**Socialization process (tacit-to-tacit):** Involves tacit-to-tacit knowledge conversion - sharing among two or more individuals

**Externalization process (tacit-to-explicit):** Involves tacit-to-explicit knowledge conversion - essentially the articulation of tacit knowledge into explicit knowledge

**Combination process (explicit-to-explicit):** Involves explicit-to-complex explicit knowledge conversion

**Internalization process (explicit-to-tacit):** Involves explicit-to-tacit conversion - personalizing the accumulated explicit knowledge into unique tacit knowledge (to gain competitive advantage), ultimately drawing a full circle (Ikujiro Nonaka, Toyoma, et al., 2000) (Ikujiro Nonaka & Takeuchi, 1995).

Internalization involves a process of reflection through action based on new insights (Alavi & Leidner, 2001). Every single mode can constantly rely on, contribute to and benefit from other modes (Alavi & Leidner, 2001). But at times these modes can operate separately.



**Figure 3:** Spiral Evolutions of Knowledge Conversion & Self-Transcending Process (Ikujiro Nonaka & Konno, 1998)

However, there needs to be a space if interaction, collaboration or knowledge exchange has to occur. Nonaka & Konno (Ikujiro Nonaka & Konno, 1998) define this space as BA' (a Japanese term) where knowledge is created and knowledge is located. BA' can be referred to "as a context in which knowledge is shared, created, and utilized, in recognition of the fact that knowledge needs a context in order to exist" (Ikujiro Nonaka, Toyama, & Byosiere, 2001). In BA', members share in time and space, and yet the phenomenon transcends beyond time and space. BA' can also be understood as a shared space for relationships to emerge (Ikujiro Nonaka, Toyama, et al., 2000). Within BA', knowledge is deep-rooted and is attained either through one's personal experience or by reflecting upon others experiences. BA' can be triggered among individuals, working groups, project teams, informal networks & circles, meetings, and emails with customer contact (customer service), amongst others (Ikujiro Nonaka & Konno, 1998).

So BA', as a shared space, is a combination of mental, physical, and virtual spaces and these spaces can be present at different levels. Additionally, when these levels are interconnected, they merge to form a greater and bigger BA'. For instance, when an individual is welcomed by a team in a shared space – the team becomes a BA' for the individual; when teams are hosted by a firm in a shared space – the firm becomes a BA' for the teams; and when firms are

welcomed by an environment – the environment becomes a BA' for the firms. Hence, to participate in BA' is the means to get involved and surpass one's own limited boundaries (Ikujiro Nonaka & Konno, 1998).

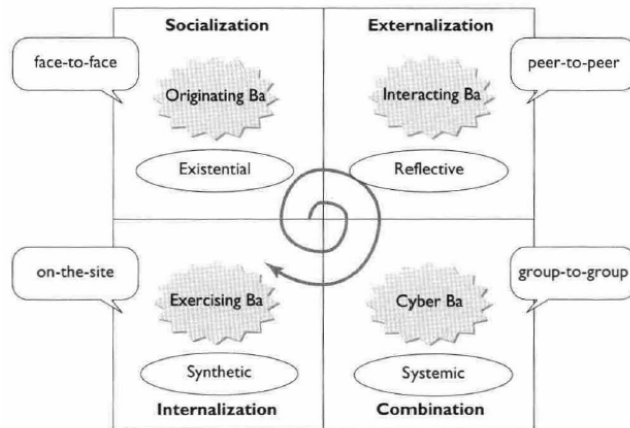
The SECI model divides BA' into four categories that parallel the four stages of SECI model respectively. The four types of BA' (Figure 4) can be described as follows (Ikujiro Nonaka, Toyama, et al., 2000):

**Originating BA'** is defined by face-to-face interactions. It is a space where personal experiences, feelings, emotions and mental models take shape. It gives a context for socialization process, as face-to-face (one-to-one or group-to-group) interaction is an important way to seize emotional reactions, obtain feedback all corresponding to an exchange of tacit knowledge. This is one space where individuals can transcend the limitations and boundaries between self and others involved.

**Dialoguing BA'** provides a space and context for the externalization process to take place where tacit knowledge can be articulated among peers and made explicit for further knowledge expansion. The articulation is represented in common terms and concepts among peers and is then self-reflected.

**Systemizing BA' or Cyber BA'** offers a shared context for the combination of existing explicit knowledge and converting it into complex explicit knowledge. Here the explicit knowledge is infused with organizational knowledge at various levels and conveyed to a large number of people in written form. Online networks, groupware, documentation and databanks, offers a virtual collaborative environment for the creation of Cyber BA'. Cyber BA' provides a shared space for the combination process to happen.

**Exercising BA'** designs a context for the internalization process that is expressed by individual and virtual interactions. In Exercising BA', explicit knowledge is transferred through virtual media, product/service specific written manuals, amongst others and made tacit that is exclusive to the firm.



**Figure 4: Four characteristics of Ba' (Ikujiro Nonaka & Konno, 1998)**

The SECI process is an important theme for structuring this research, as tacit knowledge is the key element being converted in three out of four modes. Keeping in mind the general consensus of the characteristics of tacit knowledge, the tacit-tacit, tacit-explicit and explicit-tacit knowledge conversion and creation over ICT seems difficult if not impossible. The research on web technologies supporting different stages of SECI process is still in the nascent stage and is evolving along with the research on ICT facilitating tacit knowledge transfer. For both, the literature is limited due to the characteristics of tacit knowledge and the difficulty in its sharing (Chennamaneni & Teng, 2011; Falconer, 2006; Flanagan, 2002; Hislop, 2002; Johnson et al., 2002; Marwick, 2001; Panahi et al., 2012, 2013a). However, lately few researchers have examined web technologies that can support different stages of the SECI process (Boateng, Malik, & Mbarika, 2009; M.A. Chatti et al., 2007; Joo & Lee, 2009; Lopez-Nicolas & Soto-Acosta, 2010; Mustapha, 2012; Panahi et al., 2012, 2013a; Sarkiunaite & Kriksciuniene, 2005; Shahmoradi & Akhgar, 2011; Shang et al., 2011).

Shang et.al (Shang et al., 2011) state that Web 2.0 assisting personalized, real time learning processes, follows the learning process of SECI model and therefore can facilitate the knowledge creating cycle. As the knowledge is created, analyzed and integrated within the four modes, community knowledge is created and eventually there is an increase in the competitive advantage. They derive four kinds of Web 2.0 service models based on a low & high control mechanism over the knowledge creating cycle (four modes).

They (Shang et al., 2011) continue to define 'Exchanger' as a platform that enables socialization & externalization; 'Aggregator' as a platform that supports knowledge creation from socialization & externalization to combination; 'Collaborator' and 'Liberator' as platforms that assist the knowledge creation from socialization & externalization, via combination to internalization but with high control mechanisms. While they mention that the quality of knowledge through Exchanger (tacit-tacit and tacit-explicit), and Liberator (explicit-tacit) is quite low, fundamentally tacit knowledge sharing and transfer involves knowledge exchange with high quality. Here the quality can be related to the 'degree of tacitness'. It can be noticed that as and when the tacit knowledge sharing mechanism changes from face-to-face (prerequisite for tacit knowledge sharing) to ICT or other mechanisms, the degree of tacitness decreases, however tacit knowledge sharing and transfer continues. Also, increasing the degree of tacitness to a higher level depends upon the 'tacit knowing' (J. R. Howells, 2002) of the individual, department or organization, which operates on the knowledge generated through web technologies.

Jaehun & Sang (Joo & Lee, 2009) examine the associations between knowledge management system driven by semantic web and the four modes of the SECI model. By providing semantics, integration and identification capabilities along with automatic processing of knowledge, the semantic web-driven KM system facilitate socialization, externalization, combination and internalization. Yet they do not explain the innate tacit element, its characteristics and the importance of the degree of tacitness. For Marwick (Marwick, 2001) ICT plays a minimal role in socialization process, but he believes groupware can supplement face-to-face interactions eventually. Emphasizing on externalization, he states that collaborative systems can be used for discussion groups to contribute collective knowledge and mentions that combination phase (high level explicitness) would be best supported by ICT.

Lee & Choi (H. Lee & Choi, 2003) explain through their analysis that ICT support is significantly related only to the combination phase. They state that ICT is crucial for codifying the explicit knowledge and for offering quick feedback for explicit knowledge. But on the other hand, Lopez & Acosta (Lopez-Nicolas & Soto-Acosta, 2010) reveal that ICT adoption & support positively influences socialization, externalization, combination and



internalization processes. They are of the opinion that SECI process depends on various ICT solutions and knowledge management strategies. ICT adoption & support influences combination and internalization processes much more positively (very highly), in comparison to its influence on socialization and externalization processes. That's because explicit knowledge is the dominant input in combination and internalization modes, while socialization and externalization modes are dictated by dominant tacit knowledge.

For enabling concepts and ideas among employees, Boateng et.al (Boateng et al., 2009) find that online interactive tools support socialization mode as these web tools help share and capture knowledge. Also, Web 2.0 admits multiple streams of externalization events to diffuse knowledge from employee to a group or a department. Moreover, they consider Web 2.0 as an innovative tool that helps integrate different groups of explicit knowledge in a single large accessible system. They highlight the support virtual communities of practice, virtual learning worlds and role-playing simulations extend to internalization mode, whose fundamental focus is to access explicit knowledge (Boateng et al., 2009). Cenni et.al (Cenni, Nesi, & Paolucci, 2012) reveal that virtual media does not support tacit to tacit knowledge conversion as this takes place in the real world but mentions that the social online networks support externalization, combination and internalization.

Transfer of codified knowledge gives rise to tacit-to-tacit knowledge transfer, which when integrated with tacit knowledge of the receiver creates new tacit knowledge. Certain ICT applications can facilitate this tacit-to-tacit knowledge transfer (Roberts, 2000).

## **2.6 SCRM approach and online co-creation**

SCRM is a fresh approach that can be defined by interlinking the Social web (having Web 2.0 functions) with CRM strategy (Greenberg, 2010b). Here social web includes user-generated content, social media tools, wikis, blogs and firm related online forums amongst others (Kaplan & Haenlein, 2010). SCRM is an approach to connect with customer and move beyond the boundaries of the organization (Ang, 2011b). SCRM has great potential in business environments where the control of relationship is shifting from organizations to customers who have the power to influence others in their

social network (Baxter, 2013). SCRM is an approach that can assist CRM strategy but cannot replace it.

Paul Greenberg, in his classic definition, defines SCRM as follows (Greenberg, 2010a): “Social CRM is a philosophy and a business strategy, supported by a technology platform, business rules, processes, and social characteristics, designed to engage the customer in a collaborative conversation in order to provide mutually beneficial value in a trusted and transparent business environment. It’s the company’s response to the customer’s ownership of the conversation”.

CRM Strategy has remained dependent on CRM systems since 2000, but the advent of Web 2.0, internet access and the increasing exchange of knowledge has reversed the classical scenario (Kärkkäinen et al., 2011; Paroutis & Saleh, 2009). The social web has been portrayed as a key technological innovation that firms have accepted as part of their CRM strategy (Stone, 2009). Social web comprises a set of websites and functions where users (employees, customers-new, existing and future) participate and create knowledge modifying it as a living web (Kaplan & Haenlein, 2010; Vinerean, Cetina, Dumitrescu, & Tichindelean, 2013). From a low interaction function like RSS feeds, wikis, tags, blogs, etc. to a high interaction function like Facebook, Twitter, online communities, organizational interactive feedback and interactive service webpages, all fall under the umbrella of Web 2.0 (Kärkkäinen et al., 2011; Lei & Yang, 2010).

Social web is the coming together of wisdom of online crowd, specific user generated content and collective intelligence, to name a few (Paroutis & Saleh, 2009). The collaborative capabilities of social web help firms invent innovative knowledge exchange & creation procedures. Here the knowledge exchange on social web happens between the firm and their customers and new knowledge creation happens mainly because of the customers (M. K. O. O. Lee, Cheung, Lim, & Sia, 2006). Social exchange & creation of knowledge can also happen through customer collaboration on online communities, product & service discussion on dedicated webpages (company blogs, Facebook pages, etc.), active feedback, and suggestions on forums amongst others (Bolton et al., 2013; Lei & Yang, 2010; Murillo & Annabi, 2002).

The setting of online interactions on social web is such that the collaboration is social (or semi-formal), unpredictable, semi-structured and there is a context created (central topic for discussions regarding a product or a service launch, discussions on branding, threads, etc.). This is mostly done by the firm for their customers and sometimes by the customers for the firm (e.g. feedback and suggestions based on experience) (M. K. O. O. Lee et al., 2006).

The online space and its collaborative process are both beneficial to firms as it gives them an opportunity to perform early forecasting, possess competitive intelligence and at the same increase customer commitment and loyalty (Murillo & Annabi, 2002). Online interactions, when compared to transactional data, are active in nature, consist of high degree of efficiency & quality (Panahi et al., 2012). Online interactions may show the actions and decision that customers take. Additionally, problem identification, customer preferences and experiences can be analyzed (Mukhtar, Ismail, & Yahya, 2012). Bringing two or more individuals together and holding them for a prolonged period of time (for business or personal) is one of the key characteristics of social web, which in turn generates huge amount of information (explicit & innate tacit) for the firm.

From the firm's point of view, it either starts online collaborations with its customers or just acts as an observer, observing conversations between customers about its products/services. Having said that, social web is an excellent platform to connect two entities for business purposes and create knowledge for NPD, Marketing, Sales, Design and Services; it can only be used as a channel and hence cannot be replaced or treated as a main application for core business (finance, operations, etc.) (Askool & Nakata, 2010).

Additionally, firms create knowledge by a constant exchange of tacit and explicit knowledge between organizations and individuals (existing or to-be customers) complementing the Nonaka-Tekeuchi SECI process (I. Nonaka & von Krogh, 2009). However, SCRM's capacity to share and create tacit knowledge has not been explored. Therefore, this research investigates the impact of SCRM approach on SECI process of knowledge conversion & creation. Also, this research examines the online spaces, active under SCRM approach, as a shared context satisfying BA'. This research extends to investigate the influence of social media activities functioning under SCRM affecting R&D for New Product Development (NPD).

Theoretically, there is a sense that the SCRUM approach has the capability to constantly facilitate tacit knowledge; therefore this research understands the process of sharing and creation of tacit knowledge in the social media space.

## 3 Methodology

In this section, the methodological approach is explained along with the emphasis on the process of data gathering. Following which this section also includes data analysis and the resulting articles. Each articles (paper two, three & four) summarized in the data analysis section includes comprehensive explanation of the interview results. Refer Table 2 for methodological overview of the papers.

### 3.1 Research Approach

For this research topic, a qualitative research approach has been considered to provide explanation towards certain inquiries. Qualitative research approach mainly includes investigating a number of social settings and actors involved in those settings (Myers, 2013)(Berg, 2001). In others words, according to Myers & Avison (Myers & Avison, 2002a), qualitative research methods have been established to examine people and the social & cultural context within which they reside. Having said that, the qualitative information source includes observation, in-depth interviews, etc. in order to explain social phenomenon. Qualitative methods usually direct the researcher to understand the experiences about the social setting in operation and answer the 'hows and the whys' of a phenomenon. It enables researchers to understand the viewpoints of interviewees and helps them explore the meaning of the phenomenon.

Allowing to understand the context- where decisions and actions takes place- has been one the key advantages of adopting a qualitative approach (Myers, 1997a). Epistemological belief system (theory of knowledge and how one can acquire it) forms the basis of this qualitative approach (Hirschheim, 1992). Epistemology denotes the theory of knowledge, specifically on the nature of knowledge, its scope, the general basis, the justification of belief (Hirschheim, 1992; Schommer-Aikins, 2004). Two fundamental points that needs to be looked at are - what is knowledge and how do we obtain valid knowledge (Hirschheim, 1992). Schommer explains personal epistemology as a system of

more-or-less independent beliefs that may or may not develop at synchronous rates (Schommer-Aikins, 2004). Moreover, there are multiple beliefs that compose personal epistemology (Schommer-Aikins, 2004). The important characteristics of proposed epistemological belief system are: the addition of beliefs about learning, the identification of distinct beliefs, the consideration of asynchronous development, the acknowledgment of need for balance and the introduction of belief nomenclature and the introduction of quantitative assessment (Hirschheim, 1992; Schommer-Aikins, 2004).

Epistemological belief systems have been researched extensively. They have highlighted the method by which people understand and know, specifically the theories and beliefs they embrace about knowing (Hirschheim, 1992; Schommer-Aikins, 2004). Qualitative research approach can follow a positivist, interpretive or a critical perspective (Klein & Myers, 1999). Positivists usually take into account that reality is shown objectively and defined by quantifiable properties that are independent of the researcher or the observer considering his/her instruments. Positivist studies try to test theory with an idea to increase the predictive understanding of phenomena (Myers & Avison, 2002b). Individual knowledge of reality is acquired only via social constructions, namely- shared meanings, consciousness, language, tools documents and other artifacts (Klein & Myers, 2001). Also, interpretive researchers do not already define the dependent and independent variables, rather they focus on the complexity of human sense making as and when the situation appears (Bonnie & Maxwell, 2005). There is a focus to understand the phenomena based on the meanings that individuals assign to them (Orlikowski & Baroudi, 1991). The assumptions of critical researchers is that the social reality is historically constituted, which is generated and regenerated by individuals (Myers, 1997b), who can consciously work to change their social & economic conditions. But critical researchers realize that their capability to do so is restricted by several forms of social, cultural and political control (Myers, 1997b).

The crucial job of critical research is to be a social critique, bringing in the restrictive and alienating circumstances of the status quo to the fore (Myers, 1997b). Critical research emphasizes on the conflicts, disagreements and ambiguities in modern-day society and pursues to be emancipatory which implies that it should help eradicate the reasons of alienation and domination (Myers, 1997b).

While interpretive research is still gaining ground and trying to match the well grounded positivist approach, Walsham (Walsham, 1995a) points out interpretive glimpses from positivist case studies theorized by Yin (Yin, 1989) and Benbasat (Benbasat, Goldstein, & Mead, 1987). He mentions that ‘the knowledge of reality is a social construction of human actors and can be understood through interpretive research methods’. Here value free data cannot be acquired, as the investigator leads the analysis based on his/her perceptions (Walsham, 1995b).

This research adopts interpretive approach to understand if there is a SCRM setting in firms. If there is an environment where SCRM approach is active then this research will also focus on the individuals that drive the SCRM approach with their subjective beliefs and the meaning that they assign to every event that occurs in that setting.

Interpretive research is considered for this study (paper two, three & four) to focus on the human sense making and explanation of various situations. So, the approach in this research has been that of a case study and the use of in-depth interviews has been to seek answers and reactions for the research questions. In addition, the assumption of interpretive studies is that, individuals build their subjective & inter-subjective understanding as and when they collaborate with the outside world around them (Orlikowski & Baroudi, 1991). So the interpretive researchers in this study aim to comprehend the research phenomena (understanding meanings that participants allocate, the research context, the links between research phenomena, allocated meaning and the context) and thereafter establish appropriate knowledge from the research field (Orlikowski & Baroudi, 1991). This research follows Walsham’s (Walsham, 1995a) approach related to the reporting on collection of field data. Walsham suggests including the details of the research sites chosen, the reasons for this choice, the number of individuals who are interviewed, the hierarchical or professional positions they occupy, other data sources that are being used, and the period in which the research is conducted.

For this thesis, researchers were involved with the interviewees only during the interviews that lasted 40 minutes to 50 minutes and therefore can be considered as ‘outside observers’ (Walsham, 1995a). Not entirely, but in some

sense researchers perform action research by influencing what is happening in the domain of action. For security reasons, researchers in this study had to give interviewees, beforehand, a brief about the research and reasons why the interview was being conducted. But the totality of the study was not revealed to the interviewees at any point in time. Advantage of being an 'outside observer' is that the researcher is seen as not having a direct personal stake in various interpretations and outcomes, and thus interviewees are relatively frank in expressing their views, which establishes a bond of trust and a good rapport (Walsham, 1995a).

This research follows a case study methodology. A case study can be termed as a research strategy designed to understand the subtleties existing within a single setting (Eisenhardt, 1989). It can include a single case study or multiple case studies (used for this study) and consequently can incorporate numerous levels of analysis (Eisenhardt, 1989). Yin (Yin, 1989) explains case study as an empirical investigation that examines modern day phenomenon within its context of reality, specifically when the limitations between the phenomenon and context are not obvious (Yin, 1989). The researcher in this study has little or no control over the events being examined (e.g. knowing the why's and the how's) (Yin, 1989).

In-depth interviews are considered as the core methodology for collecting data based on the interpretive stance adopted. Through in-depth interviews, we understand the human experience at the holistic level, in turn showcasing interpretive research. Data is gathered through notes (observation) and audio-taped interviews (in-depth interviews - as this process gives a full description that the interviewees articulate) (Maykut & Morehouse, 1994). Yin (Yin, 1989) too discusses that evidence for case studies can flow from different sources (documents, archival records, interviews, direct observation, participant observation, and physical artifacts) (Yin, 1989). Nevertheless, for interpretive case studies interviews are argued to be the primary data source, because it is the methodology of an interview through which the investigator can access the participant's interpretations. The participant's interpretations can be about the ongoing actions, events, self-aspirations, view of other participants, etc.



### 3.2 Methodological overview of the papers

Articles #	Emphasis	Research Questions & its Objectives	Methodology used	Data Collection process	Data Analysis
1	Based on historical literature mentioning the key elements that are important for SCRM approach to exist.	RQ: 1) What are the key enablers for SCRM approach?  -To research and highlight the key elements that are important for SCRM to exist	Content analysis.	Literature review with respect to Web2.0, CRM, Strategic CRM, NPD, Customer knowledge management and organizational knowledge creation.	Seeking relevant research papers that might help define SCRM and signify research elements that can shape concept of SCRM.
2	Investigating SCRM activities with respect to product and services.	RQ: 2) Does SCRM approach facilitate tacit knowledge creation for product development? If yes, how?  -To test the standard pattern of the SECI process with knowledge creation through SCRM approach.	Interpretive case study.	Semi-formal interviews in a structured (extending towards semi-structured interviews) format with predefined interview questions.  -Interviews involve marketing managers, product designers, social media expert managers, brand managers, etc. who develop products and services through online collaboration.	Transcribing and coding of recorded interviews.
3	Investigating online spaces active under SCRM approach.	RQ: 3) Do online spaces functioning under SCRM approach create tacit knowledge? If yes, how? What are the different online collaborative methods used under SCRM approach?  -To examine the online spaces that creates knowledge and analyze if these online spaces satisfy BA' as a shared context	Interpretive case study	Semi-formal interviews in a structured (extending towards semi-structured interviews) format with predefined interview questions.  -Interviews might involve marketing managers, product designers, social media expert managers, brand managers, etc. using different online spaces in search for product knowledge, brand knowledge, etc.	Transcribing and coding of recorded interviews.

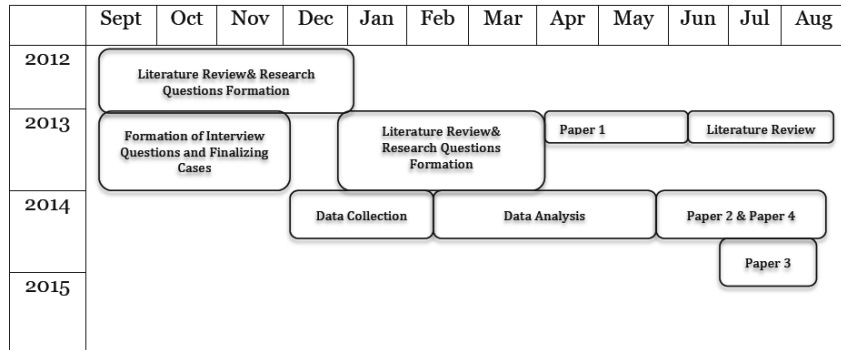
4	Examining effects of social media integration.	<p>RQ: 4) How are companies modifying R&amp;D to integrate Social Media activities into New Products Development?</p> <p>-Use of 'mechanism of co-ordination' to explore the modifications in the traditional R&amp;D processes</p>	Interpretive case study	<p>Semi-formal interviews in a structured (extending towards semi-structured interviews) format with predefined interview questions.</p> <p>-Interviews involve marketing managers, product designers, social media expert managers, brand managers, etc. who use different online spaces in search for product knowledge, brand knowledge, etc.</p>	Transcribing and coding of recorded interviews.
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**Table 3:** Methodological overview of the papers

### 3.3 Research Process

The research study began in 2012 (Figure 5) and was performed based on the newness of SCRM and the tacit knowledge research in ICT research field. During the literature review phase, it became evident that there were limited articles on SCRM approach but good amount of literature on knowledge creation that could design a relevant theory and develop significant contribution around SCRM. Also, the academic articles mentioning SCRM focused more on its benefits to the business community and CRM practitioners (IT, Strategy, Marketing, Sales and Services). A research gap was discovered and at the same time an opportunity to explore and examine the notion of SCRM from a theoretical point of view adding value to the academic community, was formulated. The classical literature of knowledge creation,

tacit knowledge, ICT, NPD, social media etc. formed the basis to delve deeper into investigating SCRM.



**Figure 5:** Research Timeline

The main motivation for paper one (working paper) was to explore the organizational and technological elements for an SCRM approach to exist. Moving ahead in the investigation, this research found the dynamic theory of organizational knowledge creation (SECI model & BA') appropriate. The overall aim of the study was to examine 'the role of SCRM approach in facilitating tacit knowledge sharing and creation'. Associating the practicality of SCRM with Nonaka's theory of model of organizational knowledge creation (SECI & BA') was another step for this research to fill the research gap. The aim was to examine the operations of SCRM approach in SECI model of organizational knowledge creation (paper 2) and to identify online spaces (online platforms for collaboration) satisfying BA' as a shared context (paper 3). Going further, another aim of this research was to examine the effects of the activities (implemented under SCRM approach) on departments in organizations (paper 4). This research uses a case study approach, to document research findings towards the new field of SCRM. This research is keen on exploring the role of SCRM approach in facilitating tacit knowledge sharing and creation, understanding the consequences of SCRM activities, and examining the changes within complex systems.

### 3.4 Data Gathering

After theoretical understanding of the association between SCRM and SECI model of knowledge creation, this research delves deeper into the process of knowledge creation through SCRM activities existing within firms at a practitioner level. The purpose was to examine the emergence of SCRM, gauge the influence of SCRM approach on organizational knowledge creation, and document the modifications brought about during the integration of social media activities functioning under SCRM. With a defined agenda, this research inched forward to finalize interview questions, shortlist companies and schedule interviews with marketing managers, product managers & designers and social media specialists. The idea was to seek information about companies online activities, online tools being used, online co-creation and cross-functional collaboration for customer knowledge creation, to name a few. The interviews were conducted in a structured format but many sub-questions were raised during the course of the interview for further inquiry.

India was chosen as a location to conduct interviews, as the emerging market is waking up to a digital reality. Organizations in India are cashing in on the market's diversity, rising Internet penetration levels, and a ballooning population that is keen on using digital platforms. Companies in consumer products and insurance sectors were shortlisted to understand how it engaged with its customers using various online spaces. The shortlisted companies were located both, in Mumbai and New Delhi. In total 20 interviews were conducted across 17 companies. The interviewees were key representatives (marketing managers, product managers & designers, sales managers, internal social media specialist and third party social media experts) with long & specific work experience, and were responsible for key products & brands, handling important customer base and were actively using social media and SCRM approaches for collaborations. All the heads and experts were leading a team of 3 to 8 members. Therefore an interview included a combination of responses from the heads and experts, as well as responses from their respective team members. The overall interview process was semi-formal and semi-structured in nature. All the case studies were examined as 'outside researcher' and not as an action researcher. The interviews were performed either in a cafeteria or in a common guest room. This was done to examine different individuals in similar settings (Dey, 2005)

The idea was to focus on the products (Consumer product & Insurance), services, brands, product innovation, etc. that were created or are being created using social media and SCRM approaches. The process varied from product launches, brand (for a product) initiations, design discussions about a particular product that is going to be launched, etc. Many interviewees were representing their teams (of 3 to 8 members). Responses (opinions, process understanding, etc.) of the team members were consolidated and delivered by the interviewees (mostly a head or in some cases a team member). It was a mix of telephonic and in-person interviews. The interview process took a little over two months.

While the first paper was a working paper to identify key enablers for an SCRM approach to exist, revisit the idea of SCRM, and highlight the importance of SCRM approach for its possible integration into CRM strategy, the second, third and fourth papers were the outcome of in-depth interviews, data gathering and data analysis.

### **3.5 Data Analysis**

Data analysis was a parallel process (Strauss & Corbin, 1990). The main aim of interpretive research is to examine the research phenomenon, meanings that the actors assign to it, the context and the procedure between the context and the research area (Orlikowski & Baroudi, 1991). The interpretive approach helped derive appropriate meanings from the data collected, examine recorded viewpoints by the interviewees, explain outcomes for the process adopted and also understand the behavior of the environment towards the actions taken (Spiggle, 1994). The data has been analyzed to understand the 'hows' and 'whys' (Dey, 2005).

Through data analysis, the process is to transform the originally collected information into something that is meaningful, associating it to the theory used in this research to benefit the academic world. The analysis has assisted in backing the concepts namely: tacit knowledge sharing & creation, SCRM, social media, NPD, knowledge creation and the changes brought about during the integration of tacit knowledge. This research follows the four basic techniques of qualitative data analysis: (1) coding (2) analytical memos, (3)

displays, and (4) contextual and narrative analysis for identifying themes, establishing categories and studying the similarities and differences in the data and relationships between them (Kaplen & Maxwell, 2005).

The theory of organizational knowledge creation and co-ordination mechanism has assisted the process of data analysis (Walsham, 2006). During the analysis, the research follows the actors, their experiences during socialization, externalization, combination and internalization processes and continues to maintain the data-theory link. Interviews were transcribed manually and coding has been subjective to some extent because of the already defined concepts and the associated theory this research focuses on.

Coding data involves analysis and subdividing the data (Basit, 2003) as well as assigning them under different SECI processes, different BA's and under different mechanisms of coordination. Coding data helped in identifying, labeling and categorizing the tacit-explicit exchange phenomenon supported by the SECI model of knowledge creation, classifying the data - derived from online collaboration, social media platforms - under the concept of tacit & explicit knowledge, categorizing the list of online platforms and labeling them under BA and processing the data under the mechanisms of coordination. Coding was done at a granular level which further supported in placing the data in the tacit-tacit, tacit-explicit, explicit-explicit and explicit-tacit knowledge conversion phenomenon, specifically labeling BA's depending on the online conversation or the online thread created by the firms. Data analysis is based on a) meaning-focused approach, through which subjective meaning of experiences and situations of the participants is decoded and b) discovery-focused approach that helps determine patterns and connections among elements of data (Fossey, Harvey, Mcdermott, & Davidson, 2002).



## 4 Review of the Results

Results are based on the literature, data analysis and its interpretation. These results have been published as one e-book series and three conference articles. All the four articles answer the significant research question:

*Does SCRM approach facilitate tacit knowledge sharing and creation? If yes, how?*

This research has considered the model of knowledge creation consisting of SECI process and the concept of BA' (a Japanese term) as a shared context for knowledge creation. Additionally, this research uses the mechanism of coordination approach to look at the changes in R&D departments due integration of social media activities into traditional product development processes. The main research questions can be further divided into sub-questions.

1. What are the key enablers for the initiation and the existence of SCRM approach?

(Paper 1)

### Micro Level Analysis

2. Does SCRM approach facilitate tacit knowledge sharing & creation for new product development? If yes, how?

(Paper 2)

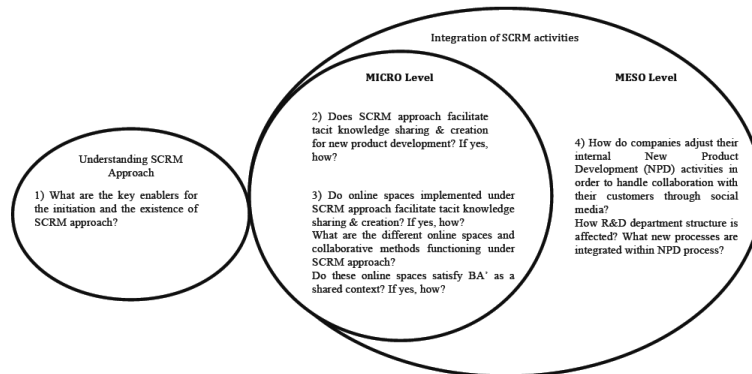
3. Do online spaces implemented under SCRM approach facilitate tacit knowledge creation? If yes, how? What are the different online spaces and collaborative methods functioning under SCRM approach? Do online spaces satisfy BA' as a shared context? If yes, how?

(Paper 3)

### Meso Level Analysis



4. How do companies adjust their internal New Product Development (NPD) activities in order to handle collaboration with its customers through social media? How is the structure of R&D department structure affected? What new processes are integrated within NPD process?  
(Paper 4)



**Figure 6:** Research Setting

Paper one introduces SCRM and revisits the core elements needed for the existence of SCRM. This research paper discusses the blending of Web 2.0's features with the existing strategic CRM and explains why SCRM should be included as one of the main pillars of CRM strategy. Paper two investigates and showcases the positive disruptions caused by SCRM activities when integrated with SECI model of knowledge creation. Paper three examines the online spaces, under the umbrella of SCRM as a shared context and understands if it satisfies BA'. It extends to understand the regular occurrences of an online BA' as a positive disruptor that constantly seeks tacit knowledge. Paper three categorize the different Ba's created through online conversations. And paper four describes the use of 'mechanism of co-ordination' and documents the positive disruptions and modifications in R&D, when NPD processes are integrated with social media activities. In addition, it also highlights the four important factors that firms are focusing on while integrating social media into NPD process. All the above papers are further described in detail.

**4.1 Paper 1: Durgam. P. "From Web 2.0 to Social Customer Relationship Management: The Place and Value". Published in the Edward Elgar series of Science, Innovation, Technology and Entrepreneurship, April 2015 (submitted in April 2013)**

*What are the key enablers for initiation and existence of SCRM approach?*

This working paper revisits SCRM approach and highlights the core organizational elements needed for SCRM approach to operate. While the emerging SCRM approach plays a vital role by providing firms with critical information to shape strong relationships with its customers and partners (Greenberg, 2010b), it is ironic that supporting core organizational elements required for SCRM approach to be implemented are yet to be examined. Since, Social CRM as a strategy is still in its embryonic stage, organizations have lately started to modify their overall strategy (marketing, sales, NPD, etc.) by integrating it with SCRM. This research paper contributes to the limited literature on SCRM by discussing the core organizational elements namely, strategic CRM, business process linkage and importance of users involved; and the technological elements namely, CRM systems and blending features of Web 2.0 strategy. Both, the organizational and technological elements are essential for operationalizing SCRM approach.

A good CRM strategy tracks customers behaviors and converts customer relationships into profitability (Mithas, Krishnan, & Fornell, 2005). It also involves collecting customer data and monitoring customer transactions to determine its customers' habit pattern (Mukerjee, 2013; Oppong, Yen, & Merhout, 2005). Earlier CRM strategy was embedded within the CRM system (Foss, Stone, & Ekinci, 2008), but it is important to examine the functioning of a CRM strategy and understand it from an SCRM viewpoint and therefore this research starts to examine the integration of Web 2.0. It is after the advent of Web 2.0 innovation as an emerging Internet technology that CRM systems have started becoming 'dependent' on CRM strategy, which changes constantly due to varying customer needs (Frow & Payne, 2009; Wilson, Daniel, & McDonald, 2002; Wu & Hung, 2009).

This paper also depicts the process linkages as the next core element, which is one of the most important pillars of CRM strategy (Mishra & Mishra, 2009; Rigby, Reichheld, & Schefter, 2002; Stefanou, Sarmaniotis, & Stafyla, 2003). Its role is crucial as CRM is cross-functional and customer-driven involving

technology-integrated business processes (marketing, sales, service and other customer oriented processes). That's why a customer centric organization impeccably integrates business processes to handle customers and react to market pressures (Mastouri & Boumaiza, 2011; Öztaysi, Sezgin, & Özok, 2011). Business process management assists the formation of the logical cores of CRM, which are (to name a few) lifetime value, customer profitability, retention, relationship marketing, and satisfaction (Stein, Smith, & Lancioni, 2013; Wilson et al., 2002). However, Web 2.0 assists the integration of different business processes. Web 2.0 consists of websites and functions where users (departments, employees, customers - new, existing and future) can participate and create knowledge (Kaplan & Haenlein, 2010; Vinerean et al., 2013). Having said that, Web 2.0 is an excellent platform to connect two entities for business purposes and create knowledge for NPD, Marketing, Sales, Design and Services; it can only be used as a channel and hence cannot be replaced or treated as a main application for core business (finance, operations, etc.) (Askool & Nakata, 2010).

While web technology and business processes are both crucial to fruitful CRM initiatives, it is the people within the organization that continue to remain the focal point of customer relationships. Implementation of relationship activities in a firm develops the social and structural bonds, which integrates people, organizational systems, and processes together (Chen & Popovich, 2003). Moving towards technology, socio-technical system can be deemed as a purposeful collaborative system or a social work system (Geels, 2004). It comprises the collectiveness of the social aspect (people), the ecosystem and the technological element (H.-F. Lin & Lee, 2006). In order to reap the benefits from the collaborative architecture, technologies and people have to be combined within a system, as they cannot be maximized separately (Cartelli, 2007). The use of a socio-technical system could be a joint optimization technique to be employed towards a determined objective. Sociotechnical systems take the notion of an 'open system' for analyzing, describing, designing and managing the environmental complexity and competition (Mumford, 2006; Pasmore, 2006). Web 2.0 can be argued to be a socio-technical system, where there is an accumulation of the wisdom of the online crowd (employees, customers, etc.) i.e. collective intelligence (Paroutis & Saleh, 2009)

While working on relationship building, agendas can be reinforced by technologies via CRM systems that permit the firms to gain insights into the behavior of its customers and produce crucial information about those customers (Ahuja & Medury, 2010; Zeng, Wen, & Yen, 2003). This paper attempts to remind the reader that the inter-functional assimilation of processes, people, operations, and marketing know-hows within an organization are enabled through CRM systems and applications. Within the setting of CRM systems, knowledge flow about products and services are uni-directional, while incorporating Web 2.0 with the operations of CRM systems is a two-way collaboration. However, Web 2.0 technologies offer multi-directional communications providing the opportunity for interaction, engagement and collaboration with the known and unknown stakeholders (Kaplan & Haenlein, 2010). Through Web 2.0 platforms, traditional knowledge management with a centralized knowledge repository has been transformed into a more interactive approach.

This paper takes the dynamics of Web 2.0 a bit further by presenting the participation in virtual communities (for effective multicultural learning, skills and educating self with no or minimum cost), thereby highlighting its reach and use. Amidst the co-existence of all components of CRM strategy, voices are getting louder to include Social CRM as one of its main pillars (Ang, 2011b; Greenberg, 2010b; Reinhold & Alt, 2011, 2012). After all, Social CRM is an innovative concept that combines social media technologies with CRM strategy, CRM systems and other CRM initiatives in order to enhance customer engagements. The process of SCRM focuses on bringing business value to firms by altering the output of strategy development process into active agendas. This social phenomena can determine the value that the company can provide to its customer, establish the value that the company can obtain from its customers and ultimately manage the value exchange. It also involves a procedure to co-produce, co-create, and increase the lifetime value of its desired customer segments.

The constant evolution of Web 2.0 has given rise to Social CRM with a mature collaborative channel and knowledge source for both, firms and its customers. This research focuses on the core elements for SCRM and its deployment, where stakeholders within and outside the firm are interconnected. This research exemplifies that SCRM revolves around CRM processes by enhancing CRM strategy through social platforms. That's also because the customer

information and product/service knowledge emerging from SCRM can complement CRM's strategic initiatives and help in satisfying the customers needs. It's the company's response to the customers ownership of the conversation. Nevertheless, there exists bewilderment about how SCRM initiatives can be incorporated and implemented and what are the infrastructure essentials to construct it. SCRM as an emerging concept has been around for sometime but is still in its nascent stage in terms of use and benefits (Greenberg, 2010b). For now, it is sure that Social CRM can be described as an extension to traditional CRM, but not a 'replacement' for traditional CRM. Wahlberg et.al. (Wahlberg et al., 2009) label it as an extension of collaborative CRM describing it as one of the main pillars of traditional CRM (Iriana & Buttle, 2006) (S. Askool & Nakata, 2010). SCRM can be recognized as a separate entity that concentrates on customer engagement generating comprehensive and effective customer knowledge rather than just customer transactional data. There is a definite need for deep integration of SCRM capability into the functions and processes of the organization for further automation.

SCRM facilitated firms	Challenges	SCRM constituents and its functionalities
<b>MTS</b>	Negative sentiment on the web. Listen and monitor online conversations. Customer engagement with unhappy customers. Predict and manage situation with potential of full-blown crisis for the brand.	Engaging online communities, customer care executives, management and online properties of the brand. Social media monitoring tool to track online conversations.. Aggressively engage unhappy customers by offering them speedy solutions.
<b>Best Buy</b>	Customer engagement, providing support, customer advocacy, providing recommendations across multiple channels, in a scalable and manageable way	Social and community team, monitoring blogosphere, social online community, twelpforce
<b>Fiskars</b>	Boost specialty store sales, customer engagements, product innovations	Blog, fiskateers.com, live events, message board, online tools
	and developments	
<b>Finnair</b>	Service improvement, addressing negative feedback	Finnair Blog, quality hunters, travel blog, basic online tools
<b>Telfonica</b>	Customer satisfaction, customer engagement	Online community, forum, crowd-sourcing of ideas, customer participation, hilfe.o2online.de
<b>Starbucks</b>	New products, innovation, reach	Starbucks Gossip, My Starbucks Idea, social media monitoring, online communities, idea generators, mystarbucksidea.force.com
<b>Procter &amp; Gamble</b>	Customer connect, innovation	Connect and develop, vocal point, being girl
<b>Dell</b>	Support, addressing issues, product & service innovation	Forum, communities, connect.dell.com, user to user interaction

**Table 4:** Examples of firms that have implemented SCRM approach

This research presents few of the many Web 2.0 & SCRM cases (Table 4) that are emerging even though the concept of SCRM is in its formative and testing stages. This research tries to provoke and motivate readers to investigate SCRM further and find the missing constituents that could make SCRM close to perfect and find a permanent place in a firms CRM strategy.

#### **4.2 Paper 2: Durgam, P. & Sinha, A. "Positive Disruptions Caused by SCRM Activities in the SECI Process of Knowledge Creation: Insights from Four Case Studies". Published in 27th Bled e-Conference (e-Ecosystems)**

*Does SCRM approach facilitate tacit knowledge sharing & creation for new product development? If yes, how?*

Paper 2 answers the sub-question that examines SCRM approach and how it facilitates tacit knowledge creation for new product development. It explores the effects of SCRM integration within the SECI process of knowledge creation. In other words this research examines the knowledge creating capacity of SCRM approach and its effects on the four modes of the SECI process (i.e. Socialization, Externalization, Combination, and Internalization as knowledge conversion modes).

Online collaboration, personalized chatting, blogging, discussions on firm specific forums, etc. are activities that operate under SCRM approach. The functions of these activities and the actors involved in those activities are not bound to time, space and organizational boundaries. As the actors collaborate on a boundless online space (online platform) there is a possibility of constant interactions, which leads to knowledge conversion and creation. The four firms considered for analysis were chosen to understand how it integrated SCRM approach and its social media strategy for developing products, improving customer service through feedback, branding & rebranding, observing conversation for future developments and improvements, amongst others. These four firms had implemented SCRM to a certain degree, but the level of integration was evident only after transcribing and coding the interviews. During exploration of transcribed interviews, it was realized from a research standpoint that the firms initiated social interaction (collaboration) in the quest for more tacit knowledge. This online knowledge related to brand, products, services, etc. had tacit elements crucial and relevant to the departments (or firms).

	Mobile & Telecom FIRM A	Cellular FIRM B	Brewery FIRM C	Home & Kitchenware Storage FIRM D
Department	Social Media & digital marketing team.	Branding.	Social Media.	SPOC's from all departments, marketing, campaign, dedicated online team.
Online Ba: Social Platforms used	Facebook, online chat, E-commerce Plugin.	Service delivery online tool, Facebook, personalized blog.	Facebook, Twitter, YouTube, Instagram, Flickr.	Dedicated webpages, microsites, Mouthshut.com, Facebook, Pin-interest, blogs.
Socialization (Tacit-to-Tacit)	Use of Personalized online chat with customers and suppliers (providing trending knowledge).	Extensive approach of One to one interaction with customers regarding brand- philosophy, engagement, ideology discussions, ideation for social problem.	Very little or no one to one or focus group online interaction.	Priority to personal complaints generated online, extensive online dialog for getting specific reasons. Understanding cues from certain online interaction about developing products.
Externalization (Tacit-to-Explicit)	Online Sharing of service problems and picking up discussion about their brand image for brand development. Online design competition with design agencies, customers and experienced designers for their products (dongles, phones, etc.).	Sharing network problems and delivery problems through online collaboration. Extensive use of Social Media listening tools to capture keywords, emotions, etc.	Nothing is tacit as the product is a 'Happy product' and mostly generates positive reviews on their website, on Facebook and on Twitter that is open to all.	Use of Social Analytics to analyze traffic and navigation path, number of hits and likes on Facebook and their website, social demographics, etc. 24/7 monitoring of online community and webpages. Frequent innovative Online water games provoking 360 degrees dialog with their customers.
Combination (Explicit-to-Explicit)	Digital marketing team connect with other departments and third party design agencies through their in house online platforms and also have personalized meetings with the customer insight teams which is also connected online. Limited or no use of Social Media at this stage.	SPOC's from every department with the relevant skills and knowledge are connected online.	Updating the sense of emotions & positive feedback on their webpages and also connect through online communities. Having Online games (such as Beer Commandments Contest) to get a better sense of their product popularity and which also helps them create new merchandise. Core departments (Marketing, Branding, Communication, Sales, Campaign, etc.) constantly connected online.	High degree of combining knowledge from both CRM database and Social Media. Extensive use of SEO, SEM, Mouthshut.com relevant to Subject Matter Expert, SPOC's, NPD teams, sales teams, amongst others.
Internalization (Explicit-to-Tacit)	Nothing is developed with the online customers.	Co-Creating all Brands with online customers	No co-creations with customers for Beer flavors or bottle style etc.	Extensive online debating on feedbacks and reactions related to new products. Regular Implementation of colors trends, seasonal trends, that is acquired through their customers and continues revisiting of all the online communities. As such it is not a formalized process but the online customer knowledge is used during all NPD phases.
Change in Pattern at different stages of SECI process	In Externalization stage. When compared to Tacit to Explicit (T→E), the change is T→E→E→T→E.	In Combination stage. When compared to Explicit to Explicit (E→E), the change is E→T→E	In Combination stage. When compared to Explicit to Explicit (E→E), the change is E→T→E	In Combination stage. When compared to Explicit to Explicit (E→E), the change is E→T→E In Internalization. When compared to Explicit to Tacit (E→T), the change is E→T→T
SCRM Integration level	Low integration	Medium integration	Very Low integration	High integration
Knowledge Created	New Designs, best practices (about common and complex network and service issues)	Brand knowledge, emotions, knowledge through positive and negative feedback	Understanding the day-to-day popularity and the sales growth.	Product knowledge, current trends, ergonomic knowledge, sales knowledge, etc.

**Table 5:** Case studies showcasing the influence of SCRM approach on the SECI process for knowledge creation. (SPOC: single point of contact; T-Tacit; E-Explicit)

In all the cases (Table 5), when the four modes of knowledge conversions were performed, there was frequent access to online spaces (due to its ease, accessibility and robustness) for seeking new knowledge. The acquired new

knowledge was further carefully codified and analyzed to extract tacit knowledge with high degree of tacitness. Due to SCRM implementation, all business units frequented the online communities at regular intervals for varied purposes - new product discussions, brand awareness after the launch of a product, design competitions, personalized chats for grievances & service issues, feedback for changes in color, shape (ergonomic designs) & size of existing products, and initiating games in order to collaborate & connect with as many customers as possible, amongst others.

Considering the online population of Mumbai and New Delhi, there was abundant information (with high tacit element) produced on the Internet platform in the form of brand knowledge, beliefs, feedback, service and product issues amongst others. Even though the forums, blogs and firm-specific webpages on Facebook and Twitter were open to public and more importantly to the competitors, business units could extract specific subjective knowledge that had high degree of tacitness. This tacit knowledge would perfectly align with firms' unique selling points, and its core products and services. This was constantly being updated as 'customer knowledge' into their database.

For all cases, this process was undertaken with the idea of future expansion in tier 1 and tier 2 Indian cities in mind. Understanding the pulse of the customer through online chats, firms were able to create tailor made products, services, and data plans and packages for individual customers. This helped them retain existing customers and at the same time attract more customers. It was due to the four modes of knowledge conversion and creation, especially socialization mode that the responsible members were actively online on their devices (phones, laptops and desktops) and regularly interacted with their customers, observing the online threads and conversations related to their brands and products, using personalized chat application and downloading the right noise (tacit knowledge) created on Facebook or Twitter. These applications were more efficient than telephonic conversation, but less efficient than face-to-face interactions. That said, it must be noted that all knowledge creation due to online activities had a varying degree of tacitness.



	FIRM A	FRIM B	FIRM C	FIRM D
<b>Socialization</b>	T→T	T→T	T→T	T→T
<b>Externalization</b>	T→E→E→T→E	T→E	T→E	T→E
<b>Combination</b>	E→E	E→T→E	E→T→E	E→T→E
<b>Internalization</b>	E→T	E→T	E→T	E→T→T

**Table 6:** Positive disruptions in the regular pattern of the SECI process

Through this one-to-many and many-to-one collaboration, firms realized the unique set of demands, problems and choices of the customers. From an organizational knowledge creation theory standpoint there was continuous online activity with respect to socialization (tacit to tacit conversions). Moreover, the business units and its members were online continuously even during the externalization mode (tacit to explicit), combination mode (explicit to complex explicit) and internalization mode (explicit-tacit) in the quest of acquiring more tacit knowledge, regardless of time and space. In view of the continuous access to online tacit knowledge regardless of the modes, SCRM approach and its activities were causing positive disruptions (Table 6) in the regular pattern of SECI model of knowledge conversion and creation.

#### **4.3 Paper 3: Durgam, P. "Online Spaces satisfying BA' as a Shared Context: Insights from Ten Case Studies". Published in 37th IRIS Conference**

*Do online spaces implemented under SCRM approach facilitate tacit knowledge sharing & creation? If yes, how? What are the different online spaces and collaborative methods functioning under SCRM approach? Do these online spaces satisfy BA' as a shared context? If yes, how?*

This research paper examines how online spaces (or online platforms) involved in SCRM activities facilitate tacit knowledge sharing & creation, and investigates if these online spaces satisfy BA' as a shared context. This research papers lists the different online spaces as a shared context and categorizes them under different types of online BAs created during collaboration?

This research investigates the online spaces that act as a shared space. The paper focuses on studying online spaces, its functionalities, and the various contexts created for collaboration on online spaces and understanding its position in creating tacit knowledge. In addition, this research examines how online spaces facilitate socialization, externalization, combination and

internalization processes. In this research paper online spaces implemented in ten firms were examined (Table 7). After analyses of the recorded data, it is realized that these firms have at least some degree of SCRM integration. The firms are from the insurance and consumer products sector.

Company	Business Unit	Online BA' (OB)	OB Influence on Originating Ba' (for Tacit to conversion)	OB Influence on Interacting Ba' (for Tacit to Explicit conversion)	OB Influence on Cyber Ba' (For Explicit to conversion)	OB Influence on Exercising Ba' (for Explicit to Tacit conversion)	Tacit Knowledge created through the Online Ba'
Health Insurance	Marketing	Use of Online platform reputation Management (ORM) for solving customer complaints within 48 hrs. Facebook, Twitter, firm's web page.	Constantly feeding new content on their dedicated online space for their customers. (Tacit)	Redefining customer services and creating new inbound opportunities based on online information. (Tacit)	Have a strong SMS and email footprint within the organization as well as outside and the resulting information is stored online and is open to all. (Tacit)	Selling new concepts and the reinventing the Brand based on their entire online and local database. (Tacit)	Moderate
FMCG (female beauty products)	Social Media	Use of Facebook, Twitter and firm's specific interactive webpages.	Introducing 'Gang of Girls' online games and conducting online competition and group discussions. (Tacit) Performing above the line online marketing and advertising.	The tacit knowledge acquired online for a certain is made explicit within the concerned departments. (Tacit)	Brand product & discussions (existing and new) with their customers and between departments. (Tacit)	Promotion of New products via search engine optimization. (Tacit)	High
Consumer Products	Third party Social Media	Facebook, Twitter and Google Plus.	Regularly updating information about new and existing products. These updates are open leading to two-way conversation.  E.g. Twitter chats, Hash tags, Blogs, Partnership with Bloggers (Tacit)	Extensive use of Online comments and feedback for their product strategy. (Tacit)	Connecting emotionally with their customer through photography via Instagram. Evaluating real time experiences about their products. Extensive use of Social tools to track the performance of the online platforms and to extract not so publicly available data. (Tacit)	Online knowledge is used for new ways of selling and brand awareness. (Tacit)	Moderate
Home & Kitchenware Storage	SPOC from all departments, marketing, campaign, dedicated online team.	Dedicated webpages, microsht.com, Mouthshut.com, Facebook, Pin-interest, blogs, etc. (Tacit)	Use of Online chat for personal complaints, discussions for getting specific reason.  Understanding cues from certain Also interaction about developing products. (Tacit)	Use of Social Analytics to analyze traffic, navigation path, number of hits and likes on Facebook and their website, social demographics, etc. Also analyzing the time spent by customers on their community and webpages. Frequent introduction of online water games provoking 360 degrees dialog. (Tacit)	High degree of combining knowledge from CRM database and from the Social Media.  Extensive use of SEO, SEM, Mouthshut.com relevant to Subject Matter Experts, SPOC, NPD teams, sales teams, amongst others. (Tacit)	Extensive online debating on feedback and reaction related to new products.  Regular Implementation of colors trends, seasonal trends, acquire through their customers continues revisiting of all the online communities.  As such it is not a formalized process but online customer knowledge is used during all NPD phases. (Tacit)	Very High
Life Insurance	Marketing	Twitter, YouTube channel & Facebook fan page	Regular Photo contest on their web pages related to 'celebrating life'.	Constant use of online platform to know product popularity	Use of Social Media listening tools to verify product performance	Life Insurance products are generally producing internally therefore not	Low

			Not much serious two-way interaction other than customer service related issues. Constantly spreading Awareness of their products through online platforms. (Tacit)	Department do not use online platform extensively once the specific knowledge has reached within the relevant department. (Tacit)		much use of Internet for customer collaboration. (Tacit)	
<b>Brewery</b>	Social Media	Facebook, Twitter, YouTube, Instagram, Flickr	Very little or no one to one or focus group online interaction	Nothing is tacit as the product is a 'Happy product' and usually generates positive reviews on their online space open to all	Updating the sense of emotions & positive feedback and connect through online communities. Having online games (such as the Beer Commandments Contest) to get a better sense of their product popularity and to create new merchandise. (Tacit) Core departments (Marketing, Branding, Communication, Sales, Campaign, etc.) are constantly connected online	No co-creations with customers for Beer flavors, or style of Bottle etc.	<b>Very Low</b>
<b>Cellular &amp; Telecom</b>	Branding	Service delivery online tool, Facebook, personalized blog.	Extensive approach of One to one interaction with customers regarding brand-philosophy, engagement, ideology, discussions, ideation for social problem. (Tacit)	Sharing network problems and delivery problems through online collaboration.  Extensive use of Social Media listening tools to capture keywords, emotions, etc. (Tacit)	SPOC's from every department with the relevant skills and knowledge are connected online. (Tacit)	Co-Creating all Brands with online customers (Tacit)	<b>High</b>
<b>Mobile &amp; Telecom systems</b>	Social Media & digital marketing team	Facebook, online chat, E-commerce Plugin	Use of Personalized online chat with customers and suppliers (providing trending knowledge). (Tacit)	Online Sharing of service problems and picking up discussion about their brand image for brand development. Online design competition with design agencies, customers and experienced designers for developing new designs for their products (dongles, phones, etc.).	Digital marketing team connect with other departments and third party design agencies through their in house online platforms and also have personalized meetings with the customer insight teams which is also connected online.  Limited or no use of Social Media at this stage.	Nothing developed with online customers	<b>Moderate</b>

				(Tacit)		Limited or no use of Social Media at this stage.		
<b>Cosmetic Products</b>	Social Unit	Media	Facebook, Twitter, Foursquare, Pinterest, Firm specific online pages, blogs, YouTube	Use of online chat with customers for discussing skin treatment, sharing personal skin related problems. (Tacit)	Extensive access of Facebook & twitter for acquiring authentic knowledge. (Tacit)	The customer service is solely handled by modern day online platforms. Online customers constantly recommending each other and giving information of competitors' products on sun protection (SPS) and blocks through online platforms. (Tacit)	Creating new products on sun protection from the online recommendation and online feedback. E.g. SPS 70 was a hit. (Tacit)	<b>High</b>
<b>Mobile Products</b>	Third Social consultancy	Party Media	Facebook, Twitter	Regular building of online content for consumer loyalty and engagement. (Tacit)	Deriving real time information from online platforms. But is not used extensively within departments. (Tacit)	Use of Social media tools (e.g. explicate and germinate) for extracting quantitative data and tracking Customer navigation. (Tacit)	Low level of online knowledge is used in New Product Development	<b>Low</b>

**Table 7:** Case Studies showcasing the tacit knowledge creation from the Online Spaces

(\*SPOC-Single point of contact)

The online spaces that were being studied ranged from online reputation management, to Facebook, Google plus and Twitter, and from dedicated webpages to microsites. Most of the firms were tracking the visits of online users to their webpages. Many firms had Facebook and Twitter accounts with followers. The actors responsible (social media consultants, brand managers, marketing managers, etc.) for a product or a brand were involved in initiating an online discussion on their respective platforms in the form of a thread, collaborating as an expert, answering queries and recognizing suggestions. Sometimes these actors were involved just as observers. The online spaces were used continuously and regularly for a product launch, brand awareness, and keeping track of older discussions that were still active (about services, products and brands). Hence these online spaces gave users the chance to acquire tacit knowledge on a constant basis.

Many product managers for a particular product were actively online from the ideating stage to pricing stage or even up to the go-to-market stage. When new knowledge on a product or services or even new feedback generated through an online space is articulated for the first time within and between departments (for knowledge awareness and sharing), there is an increase in online activity in departments for cross-checks and also by the source department (the department that actually communicated the new information for the first time) for additional information on an ongoing basis. The queries

emerging during peer-to-peer brainstorming sessions or team meetings within a department are partially solved through online collaborations.

Some product managers were most active during the final phase of developing a product (rechecking historical online data related to the product being developed and sometimes also asking for further suggestions on the product being developed). It was observed that whenever there was an online access from the firms' side (product experts, social media experts, etc.) there was new discussion initiated and more often than not, there was collaboration between the firm and the user (potential customer, consumer, lost customers, etc.). During the course of analysis, it was realized that online spaces were enabling one-to-one, one-to-many and many-to-many online communication, resulting in knowledge conversion and knowledge creation. From dynamic theory of knowledge creation viewpoint, online spaces were highly active in the socialization mode (tacit to tacit conversions) and created an online space for two or more people to collaborate. Moreover, the users used the online spaces extensively even during the externalization mode (tacit to explicit), combination mode (explicit to complex explicit) and internalization (explicit-tacit) mode for acquiring more tacit knowledge.

Knowledge creation needs a place, space and a context. BA' (generally means 'place') gives such a context and place where two or more individuals can collaborate to create new knowledge. BA' is defined as a shared context and hence Originating BA' mainly offers to a shared context for socialization. While Dialoguing BA' provides a shared context for Externalization, Systemizing BA' provides a shared context for the combination and Exercising BA' delivers a shared context for Internalization.

Moreover, online collaborations generally revolve around a context. In other words, a context is created and shared among the members of the online communities for initiating a discussion. This research defines this online space as 'Online BA', one that satisfies Nonaka's definition of BA' as a shared context. An Online BA' completely represents an Originating BA's setting to create new tacit knowledge. In an Originating BA', conversations can be initiated between two or more individuals within a physical space. Similarly in Online BA', two or more individuals can collaborate on an online space (not restricted to time and space). It is also realized that the integration of online spaces and the ease to access it, frequently creates an Originating BA' setting.

Therefore, during the process of Dialoguing BA', Systemizing BA', and Exercising BA', there are multiple occurrences (Figure 7) of Originating BA'-like situations due to the constant access to online communities and platforms in the quest of seeking tacit knowledge.

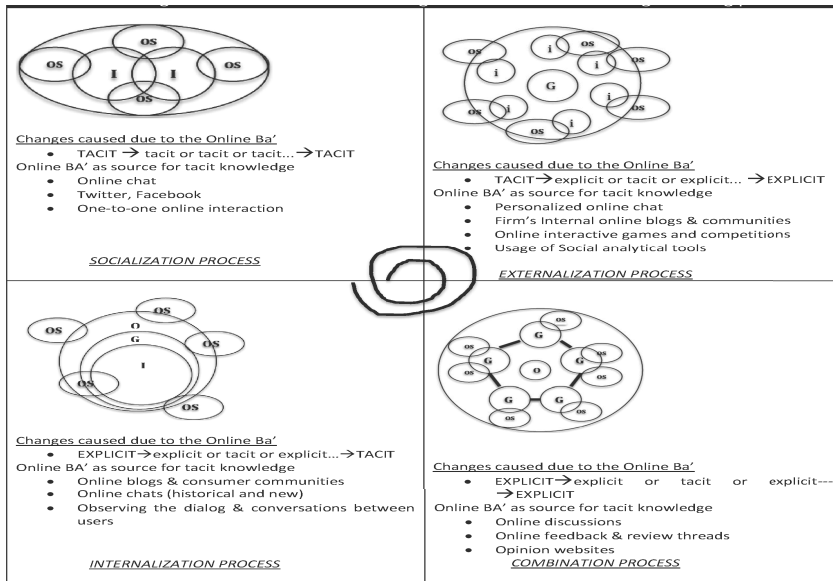


Figure 7: Multiple occurrence of Originating Ba' Setting

- I=individual
- G=group of individuals
- O=organization
- OS=online space(s)

Some firms were highly dependent on tacit customer knowledge to be included in their product or service development. Some depended moderately on the tacit customer knowledge and more on their internal expertise, and others had low dependency on tacit customer knowledge, because either they didn't realize the need yet or were risk averse. In all the case studies there was little or no face-to-face interaction and there was no need of a physical space. We define the above phenomenon as Online BA' that satisfied the original concept of BA' as a shared context. We know that BA' needs a context to be created and while documenting the emergence of Online BA' we started focusing on the context that was getting created in the online space. The contexts, generally created by the firms were related to a brand, product or service. Sometimes, the contexts were created by the consumers, potential customers, unhappy customers, etc. and were in the form feedback, general awareness or discussions. Adopting a microscopic view, this research categorizes the context subsequently categorizing different BAs (Table 8) that fall under the umbrella of Online BA'. For example, the context that was around 'product

campaigning’ followed by a discussion through a thread, was named ‘Campaigning BA”, a context around ‘feedback’ was termed ‘Feedback BA” and so on. Below is the table with the different BAs created in the online space.

Company	Business Unit	Online Ba' (OB)	Different Online Ba' created (Categorization)
Health Insurance	Marketing	Online platform reputation Management (ORM)	Reputation Ba', Service Ba', Branding Ba'
FMCG (female beauty products)	Social Media	Facebook, Twitter and firms specific interactive webpages	Campaign Ba', Online Competition Ba',
Consumer Products	Third party Social Media	Facebook, Twitter and Google Plus	Interaction Ba', Product Ba', Photography Ba'
Home & Kitchenware Storage	SPOC from all departments, marketing, campaign, dedicated online team	Dedicated webpages, microsites, Mouthshut.com, Facebook, Pin-Interest, blogs, etc. (Tactic)	Complaint Ba', Tracking Ba', Feedback Ba', Innovation Ba'
Life Insurance	Marketing	Twitter, YouTube channel & Facebook fan page	Photography Ba', Online Listening Ba'
Brewery	Social Media	Facebook, Twitter, YouTube, Instagram, Flicker	Online gaming Ba', Competition Ba'
Cellular & Telecom	Branding	Service delivery online tool, Facebook, personalized blog (Tactic)	Branding Ba', Ideology Ba', Co-Creating Ba'
Mobile & Telecom systems	Social Media & digital marketing team	Facebook, online chat, E-commerce Plugin	Network Ba', Design Ba', Service Ba'
Cosmetic Products	Social Media Unit	Facebook, Twitter, Foursquare, Pinterest, Firm specific online pages, blogs, You	Personalized Ba', New product development Ba'
Mobile Product	Third Party Social Media consultancy	Facebook, Twitter	Loyalty Ba', Analysis Ba'

**Table 8: Ba' with their respective context**

#### **4.4 Paper 4: Pacauskas, D. Durgam, P. Formin, V.V. “ How Companies Can Modify R&D for Integrating Social Media Activities into the New Products Development” Published in 27th Bled e-Conference (e-Ecosystems)**

*Paper 4 addresses the question on how companies modify R&D departments to integrate social media activities into the New Products Development? How R&D structure is changed? What new processes are integrated within NPDP processes?*

The paper focuses on customer innovation, which is an important element of open innovation. Co-creation, amongst other business processes that define customer innovation has recently been adopted and widely accepted within the new product development (NPD) process. Social media activities implemented under SCRM approach greatly facilitate online collaboration and co-creation supporting customer innovation that brings about certain changes within and among departments. Through earlier research papers and theory, this research highlights that SCRM approach has the capability to share and create tacit knowledge with a varying degree of tacitness.

The online interactive platforms like Facebook, Twitter, online blogs, virtual forums, etc. have given firms the possibility to efficiently reach its customer base. Through the process of online customer collaborations, firms intend to increase the pace of product development. Bearing in mind the integrity and

the benefits of online customer collaboration, this open innovation strategy works contrarily to the conventional, vertical integrated model of R&D where products are developed through the capabilities that are available within the boundaries of the firm. Therefore with the increased integration of open innovation approach through social media; the functioning of the in-house R&D is questioned. It is still unclear how R&D is regulated in order to deal with customer innovation.

The semi-structured interview process starts with questions pertaining to the usage of social media activities and the changes occurring in product development. Social media and product development experts are chosen to explain the online collaborative patterns and the focused product development activities, to the interviewer.

Overall ten people were interviewed, out of which six were from five different social media consultancies, two were from insurance firms and two were product design specialists (one working as a freelancer and another employed as a product designer). These social media experts explained that various firms they handled had successful cases related to the usage of social media in NPD processes. While some of the product design specialists mentioned they had recently implemented social media activities for firms, others expressed their desire to start heavily implementing social media activities at the earliest, as they realized they were losing the market to their competitors who were dominating on social media platforms.

According to the social media experts, following the advent of social web, co-creation through social media and the importance of outside knowledge (customer knowledge) became very prominent. It was also because traditional marketing research methods were not able to cope with the target market. It became amply clear that online co-creation (including feedback, complaints and suggestions) could help product managers ideate concepts for new products.

Coordination mechanisms were considered for investigating changes in the R&D structure and the associated NPD processes. Based on transcribed interviews, related changes in NPD were highlighted. Three coordination mechanisms namely departmentalization, centralization and cross-departmental relations, were considered. Interviews were further analyzed



based on the values of the found mechanisms. Subsequently, structural changes were analyzed under departmentalization label; departments involved in social media were analyzed under the centralization label, and knowledge flows within departments were analyzed under the cross-department relations. In addition, the effects of social media on the three co-ordination mechanisms were also examined.

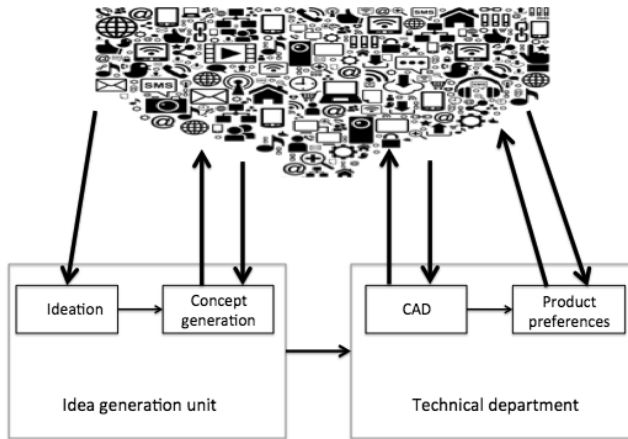
The integration of social media activities led to the following changes. It was observed that under centralization label, some firms created a new organizational unit (or an already established unit was given the responsibility) to deal with social media activities. Some firms even created a new position with a fancy designation - Chief Social Media Officer – to take responsibilities of social media activities. Bigger firms with a rigid structure did not create a separate team, but instead made marketing teams take up this responsibility and pass on relevant online information to branding and customer service teams.

But the best model was one where firms created a separate social media team and every member of this newly formed team was assigned to work with different departments of the firms to gather relevant information. These members would then get together as a team to discuss their rich pool of knowledge to further devise improved strategies. In some firms it was observed that the social media team's structure and functionality was based on the maturity of the brand. In bigger firms the level of interaction with social media unit would vary depending upon the maturity of the brand or product (higher maturity had less or no level of interaction).

When considering the cross-department relations, based on one of the interviews, it was learnt that more time was needed for decision-making in structured firms and if the structure was flexible then all the departments were connected to each other and were involved together in the firms' social media activities. Many firms also believed that there should be free flow of information within departments and maintain zero redundancy. Firms realized that if more number of departments connected to social media, the strength of its online space would grow accordingly.

Bearing in mind the departmentalization mechanism, in an R&D department, the ideation of the product was usually generated from the market, following

which the ideas were converted to a concept and eventually helping the product to be developed.



**Figure 8: Separation of product development and intense interaction**

It was observed that firms were trying to separate a department into different units (Figure 8). Consequently there were units researching the market and at the same time developing product ideas, while other units were developing real products based on the generated idea. Furthermore, there were other technical units that developed the actual product with their technical and legacy knowledge. Another observation was the division of a customer service department into different units where one unit tracked customer satisfaction; second tracked grievances, another unit maintaining follow-ups and so on. During the analysis it was observed that there were issues and concerns due to which firms were not completely relying on social media. Concerns ranged from intellectual property being leaked, reaching customer segments that still believed in the ‘touch and feel’ approach and wanted to see the product in reality, to motivation & willingness of the customers to participate at different or all NPD phases.



## 5 Discussion and Conclusion

Tacit knowledge is of great interest to this research. Keeping in mind the actual definition and rigidity of tacit knowledge, it is difficult to articulate, share and create tacit knowledge. Michael Polanyi expresses 'tacit knowing' while describing the idea of tacit knowledge. But scholars like Ryle, Tsoukas, Panahi, Oguz & Sengün, amongst others, analyze the meaning of tacit knowledge and refer to tacit knowledge as 'knowing-how', which is in the realm of knowledge. Moreover, tacit knowledge (knowing-how) is extensively referred to in the organizational and knowledge management studies. It is noticed that tacit knowledge and explicit knowledge cannot be termed as pure tacit (absolute tacit) or pure explicit (absolute explicit) (Hislop, 2002; Johannessen et al., 2001; Mohamed et al., 2006; Panahi et al., 2013a). Hence, tacit knowledge and explicit knowledge cannot be separated, as they are mutually constituted (Hislop, 2002; Tsoukas, 1996).

All existing knowledge is 'either tacit or rooted in tacit knowledge' implying that explicit knowledge is dependent on tacit knowledge, while tacit knowledge owns itself. It also implies that explicit knowledge has an underlying tacit element, which is subjective to an individual or a firm. Additionally, tacit knowledge evolves from explicit knowledge depending on a specific context. It is necessary to say that tacit knowledge exists randomly in society and relates to the context of a specific problem. Tacit knowledge can be accessed through social networks, know-how or by asking the right questions. To further simplify the notion of tacit knowledge, the degree of tacitness is considered. Degree of tacitness with respect to knowledge at an organizational level is categorized in a continuum, ranging from explicit to tacit. Therefore, within the spectrum of the tacit and explicit knowledge there are two other levels of tacit skills, one that can be articulated and the other that can be articulated imperfectly.

Keeping in mind the description of tacit knowledge (knowing-how) and the degree of tacitness, ICT and its Web 2.0 tools can facilitate tacit knowledge

transfer and sharing (medium to low degree of tacitness). However, it is not as effective as face-to-face interaction where sharing and creation of tacit knowledge contains high degree of tacitness. To investigate further, this research considers SCRM approach and its capability to share and create tacit knowledge. Answering the explicit research question ‘Does SCRM approach facilitate tacit knowledge sharing and creation? If yes, how?’ this research investigates the SCRM approach and online activities through four sub-questions. This research starts by answering the following questions: 1) what are the key enablers for the initiation and the existence of SCRM approach? 2) Does SCRM approach facilitate tacit knowledge creation for new product development (micro level analysis)? If yes, how? 3) Do online spaces implemented under SCRM approach facilitates tacit knowledge creation? If yes, how? What are the different online spaces and collaborative methods functioning under SCRM approach? Do these online spaces satisfy BA’ as a shared context (micro level analysis)? If yes, how? 4) How do companies adjust its internal New Product Development (NPD) activities in order to handle collaboration with its customers through social media? How R&D department’s structure is affected? What new processes are integrated within NPD process (meso level analysis)?

For this research topic, a qualitative research approach helped obtain solutions towards certain inquiries. Qualitative research allowed investigating a number of social settings and actors involved in those settings. Through observation, in-depth interviews, documents, texts, etc. this research could explain the social phenomenon. Nevertheless, interpretive case studies were the primary data source, because it was the methodology of an interview through which this research could access the participant’s interpretations.

SCRM approach provides the right setting and proper mechanisms to share and create tacit knowledge with medium to low degree of tacitness assisting other tacit knowledge creation with high degree of tacitness. It is observed that core organizational elements namely strategic CRM, business process linkages, users involved; and the technological elements namely CRM systems, Web 2.0 tools are essential for operationalizing SCRM approach. We explain through our investigation that social media activities and online collaboration functioning under the SCRM approach provide a socializing setting on a continuous basis for acquiring tacit knowledge. In order to understand the

tacit knowledge creation capacity of SCRM approach, the dynamic theory of knowledge creation (SECI & BA') is adopted.

This research also illustrates in its theoretical contribution section, how online activities implemented under SCRM approach create an opportunity for accessing tacit knowledge in all the four modes of SECI model. The online activities active under SCRM approach provide individuals and departments with an opportunity to interact with their / its customers on a regular basis to extract customer knowledge which has high tacit element (subjective to an individual or a department). Moreover, these online interactions extend beyond time and space changing the regular pattern of SECI model in a positive way and increasing the quality and quantity of tacit knowledge. This research also describes online spaces (online platforms) that offer a shared space for collaboration and at the same time provide a context for those collaborations to be in line. These online spaces satisfy BA' as a shared context and continuously create an originating BA' setting between other BA's.

This research also contributes by presenting the changes in R&D departments that occur due to integration of social media activities in the NPD process. The integration of social media activities stimulates changes in the R&D departments, ranging from creating new high-level positions to monitor social media activities (e.g. chief social media officers) to cross-functional changes that involve making marketing departments take additional responsibility for social media and integrating its functions with other departments. It is also noticed that in some cases, a new team of social media experts is created along with other teams such as marketing, sales, customer service, campaign management, brand management, etc. Furthermore, each social media expert (from the new team) is assigned to other teams (marketing, sales, customer service, campaign management, brand management) to improve communication and information flow between teams and departments. These are all substantial changes in the structure of R&D departments in firms, which thereby reiterate the growing importance of social media activities in the larger scheme of things.

## 5.1 Theoretical Contribution

The outcome of this dissertation provides several theoretical contributions. This research highlights a different meaning of ‘tacit knowledge’, which is closely associated to ‘knowing-how’ rather than ‘tacit knowing’. This research also adds a new dimension – ‘the degree of tacitness’ -which further breaks down the spectrum of tacit and explicit into different degrees. While exploring the concept of tacit knowledge it was interesting to find some literature on the possibility of ICT facilitating tacit knowledge sharing against a large amount literature emphasizing, how it is impossible for ICT or IT to share and create tacit knowledge. This is because the notion and characteristics of tacit knowledge were defined rigidly so far.

To support and add to the existing literature on ICT facilitating tacit knowledge sharing and creation, this research considers the concept of SCRM approach. This research examines the activities active under SCRM approach and for this examination; it adopts the dynamic theory of knowledge conversion and creation defined by Nonaka.

The dynamic theory of knowledge conversion and creation is designed around the tacit-explicit dichotomy. Nonaka defines tacit knowledge rigidly along the same lines of Michael Polanyi and states that tacit knowledge sharing and transfer can only happen through face-to-face interactions and indwelling for an extended period of time. This implies that out of the four modes in SECI model (Socialization (tacit-to-tacit), Externalization (tacit-to-explicit), Combination (explicit-to-explicit) and Internalization (explicit-to-tacit), three involve tacit knowledge and that the three modes of knowledge conversion and creation can take place only through face-to-face and indwelling. Given the possibility of ICT facilitating tacit knowledge, taking into consideration the different degree of tacitness, this research has gone beyond (not against) the conventional working of the SECI model and explored the effects of SCRM integration within the SECI process of knowledge creation.

Social media activities active under SCRM approach provide opportunity for joint collaboration where two or more individuals can interact transcending time and space. Even though social media activities are not as effective as face-to-face interactions, they accumulate knowledge from different sources, which have innate tacit elements with low to medium degree of tacitness. This collective knowledge is accumulated constantly for problem solving, developing products and services amongst others.

From an organizational knowledge creation theory standpoint (and considering SCRM approach) there is continuous online activity with respect to socialization (tacit to tacit conversions). Moreover, the business units and its members are online continuously even during the externalization mode (tacit to explicit), combination mode (explicit to complex explicit) and internalization mode (explicit-tacit) in the quest of acquiring more tacit knowledge, regardless of time and space. Looking closer we can identify that due to the social media access, Socialization-type setting is created constantly in all the other three modes for acquiring tacit knowledge. Considering the continuous access to tacit knowledge, regardless of the modes, SCRM approach and its activities cause positive disruptions in the regular pattern of SECI model of knowledge conversion and creation.

Additionally, online spaces (online platforms) implemented under the SCRM approach are highly active in the socialization mode (tacit to tacit conversions) creating an online space for two or more people to collaborate. Moreover, due to the ease of access the users connect to the online spaces extensively even during the externalization mode (tacit to explicit), combination mode (explicit to complex explicit) and internalization (explicit-tacit) mode to acquire more tacit knowledge.

Knowledge creation needs a place, space and a context. BA' (generally means 'place') gives such a context and a place where two or more individuals can collaborate to create new knowledge. Moreover, online collaborations generally revolve around a context. In other words, a context is created and shared among the members of the online communities for initiating a discussion. This research has defined this online space as 'Online BA' that satisfies Nonaka's BA' as a shared context. Additionally, Online BA' completely represents an Originating BA' setting to create new tacit knowledge. In an Originating BA', conversations can be initiated between two or more



individuals within a physical space, similarly, in an Online BA' two or more individuals can collaborate in an online space (not restricted to time and space). It is also realized that with the integration of online spaces with the ease to access it, frequently creates an Online BA' with an Originating BA' setting. Therefore, during the process of Dialoguing BA', Systemizing BA', and Exercising BA', there are multiple occurrences of Originating BA' like situations due to constant access to online communities and platforms in the quest for seeking tacit knowledge.

In all the case studies there were little or no face-to-face interactions and there was no need of a physical space. We know that BA' needs a context to be created and while documenting the emergence of Online BA' we focused on the context that was being created in the online space. The contexts, generally created by the firms were related to a brand, product or service. Sometimes, the contexts were created by consumers, potential customers, unhappy customers, etc. and were in the form of feedback, general awareness or discussions. Adopting a microscopic view, this research categorizes contexts subsequently categorizing different BAs that falls under the umbrella of Online BA'. For example, the context that was around 'product campaigning' followed by a discussion through a thread, was named as 'Campaigning BA"', a context around 'feedback' was termed as 'Feedback BA"' and so on. Considering that Online BA' creates a shared space with a context for collaboration, this research implies that Online BA' satisfies BA' as a shared context.

After examining and presenting the mechanisms of tacit knowledge, the degree of tacitness and its facilitation through ICT and SCRMM approach at a micro level (in a particular department or business unit), this research describes the changes that occur at a meso level (among departments) due to the integration of social media activities. This research contributes by presenting the changes in R&D departments that occur due to the integration of social media activities in NPD processes. Three coordination mechanisms namely departmentalization, centralization and cross-departmental relations, are considered. After the integration of social media the following changes and modifications are presented. With respect to centralization, to deal with social media activities a new organizational unit is created or an already established unit is given the mantle of responsibility. It is observed that many firms are carving out new roles with new designations like the 'chief social media officer', who is responsible for social media activities.

Bigger firms with a rigid structure have assigned social media responsibilities to marketing teams and the teams have been directed to pass relevant online information to brand and customer service teams.

But the best model this research believes is one where the members of a newly created social media team are assigned to work with different departments for improved information flow. In some firms it is observed that the social media team's structure and functionality is based on the maturity of the brand. In bigger firms the level of interaction with social media unit would vary depending upon the maturity of the brand or product (higher maturity had less or no level of interaction).

At the cross-department relations level, it was highlighted that more time was needed for decision-making in structured firms and if the structure is flexible then all the departments are connected to each other and are involved together in the firms social media activities. Many firms also believe that there should be free flow of information within departments and maintain zero redundancy. Firms realize that it is in its interest to connect more number of departments to social media in order to strengthen its online space.

Bearing in mind the departmentalization mechanism, in an R&D department, the ideation of a product is usually generated from the market, following which the ideas are converted into a concept and eventually the product is developed.

## **5.2 Implication for practitioners**

This research has various implications for practitioners. It presents to them, the importance of SCRM implementation for acquiring tacit knowledge through social media activities. It explains how utilizing social media activities to connect with customers will give firms various opportunities to acquire customer knowledge and how that knowledge can be used for product innovation and to develop brands and services. This research throws light on the benefits of online collaboration and co-creation, as firms can tap into the tacit content i.e. customer knowledge, present in the conversations, feedback and observations. Through the SCRM approach, firms can increase the knowledge creating capacity by incorporating user-generated content, interactive blogs, online forums, social networking sites, etc.

An SCRM initiative can strengthen networks and build loyalty towards customer and vice versa and at the same time offer an incentive to develop internal collaboration between departments. While tapping tacit content, firms get an opportunity to identify lead users, lead contributors and experts. Additionally, the process of identification constructs a bottom-up approach for tacit knowledge sharing and creation. Social media activities implemented under SCRM can also help firms become aware of early experiences from its customers thereby increasing organizational knowledge. Incorporating SCRM approach during new product development can prove beneficial by providing collective intelligence. Online communities can be created for different phases of new product development for continuous innovation, which will reduce innovation costs and lead to a shorter development cycle. These communities or groups can be a part of a team, assisting the team members with quick solutions and feedback.

An SCRM initiative cannot replace the traditional mechanisms of customer collaborations, but it surely can assist in connecting with customers. A CRM system can learn about their customers but disregard what they know. For a firm, if CRM systems and market research reach its capacity of obtaining 'accurate' customer knowledge and if they lack the swiftness in capturing the current customer experiences, SCRM initiatives can be an excellent extended strategy to fill this gap and help overcome the limitations of a CRM system. Through active online collaborations, there is an exchange of knowledge between firms and its customers unlike the older methods where knowledge was only 'pushed' towards the customer. Knowledge sharing has come a long way from being a one-way street.

### **5.3 Limitations**

This research has certain limitations though. The data gathering process was performed in India, therefore the results might differ in other geographic locations with varying organizational cultures. This research gathers data from verbal interviews, which is subjective in nature (based on the interviewee's association with a particular business unit). It does not consider the observational approach - observing different departments and its members at the same time - where data gathered and results may differ, possibly making the research more objective.

In this research tacit knowledge is understood from the organizational knowledge creation and new product development standpoint and not from the customer's side. This research does not consider customers motivation to participate, product and service knowledge that the customer gathers during an online collaboration, incentives, etc. Tacit knowledge can be analyzed at a more detailed level by considering its usage in different research streams (new service development, public sector, human resource, etc.). This research analyzes the meaning, degree and effects of tacit knowledge, but does not consider the codifying process of tacit knowledge, calculation of the tacit element in explicit knowledge and the ephemeral tendency of tacit knowledge. Another limitation is that this research focuses only on tacit knowledge and excludes explicit knowledge to a large extent. This research shows the transference of tacit knowledge from micro to meso level but does not consider linking micro-meso level to macro level.

#### **5.4 Future Research**

The inter-linkages, interdependency and the indivisibility of tacit knowledge and explicit knowledge is contested on a continuous basis and therefore there is immense potential for tacit knowledge research. Future research could move towards examining tacit knowledge at an individual level within online communities outside the boundaries of a firm.

The current research is designed within the premise of two specific industries – consumer products and insurance sectors. It must be noted that research results could be different for other sectors and it is worth examining and studying how SCRM works for other industries. While mechanisms could be similar, the processes, platforms, and outcomes could considerably vary – all of which will add valuable data to the skeletal nature of research on this topic. For instance, if healthcare industry were to be studied, new insights on the nature of tacit knowledge transfer between hospital staff (doctors, nurses, administration, etc.) and patients through social media would emerge. It would also pave way to understand how new services are born through innovative collaboration techniques, based on demand. Distinct results could also be determined for creative industries such as the media, where the nature of customer (in this case audience) engagement via social media (citizen journalism, crowdsourcing etc.) is used to co-produce content with high degree of tacitness. Future research in new industries will help understand

SCRM better and will raise new issues, which will give rise to more discussions in the world of academia.

SCRM can be recognized as a separate entity that concentrates on customer engagement and generates customer knowledge. It should not be considered just as an online collaborative application for assisting sales and marketing. It would be crucial to understand the deep integration of SCRM capabilities into the functions and processes of the organization for further automation.

SCRM research should be ongoing as the social environment is ever changing and dynamic. Future research could include more relevant case studies on SCRM strategies and tools and highlight its capabilities and limitations. Researchers could investigate the performance dimensions of the SCRM approach, focusing on infrastructure. Future research could extend and look at the customer usage aspect, how they co-create, and what are their motivations to co-create. Categorization of customer knowledge with different tacit elements will also be an interesting topic to look into. Future research can be done on how trust and motivation influences tacit knowledge sharing within the members of a department, among departments and between departments and actors outside the boundaries of the firm. Future research could extend towards designing a concrete SCRM system and studying its effects on the traditional CRM systems and the overall CRM strategy.

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# **PART II: List of Original Articles**



## ARTICLE I

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# 17. From Web 2.0 to Social CRM: the place and value

**Pradeep Durgam**

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## INTRODUCTION: THE INTERACTIVE SOCIETY AND THE LACK OF SOCIAL EXPERIMENTATION

Since 2000, contemporary information and communication technology (ICT) as an emerging phenomenon has suggested several enhancements and provisions for the traditional customer relationship management (CRM) systems that have already been deployed, and for those on the verge of being implemented. The sole reason behind this strategy has been to better organize customers and proficiently manage them (acquisition, retention, and so on) (Rodriguez and Honeycutt, 2011; Xiong et al., 2011; Gebert et al., 2002). CRM systems were devised in order to streamline the processes related to marketing, sales, services and various other activities which involved customers. Therefore, the CRM system, a part of the enterprise's CRM strategy, is the core element for maintaining and managing customer information. For years, CRM systems have been counted as one of the many technological facilitators for simulating and revitalizing CRM strategies. The main aim of CRM strategy is to try and administer customers' behaviour and transfigure customer relationships into profitability. It also involves collecting customer data and monitoring customer transactions to determine customers' thought process (Feiz et al., 2011; Nambisan and Baron, 2007). For instance, understanding of the customer, and process efficiency with the help of aligned CRM systems, increases the purchasing level for the customer and decreases the cost of customer retention for the firm (Lemon et al., 2002; Xu and Walton, 2005; Verhoef, 2003; Jayashree et al., 2011; Zineldin, 2006). But that was not always the case. There was a time when CRM strategy was embedded or encompassed within the CRM system. It was after the advent of Web 2.0 innovation as an emerging Internet technology that CRM systems started becoming 'dependent' on CRM strategy, which changes constantly due to varying customer needs (Faase et al., 2011; Li et al., 2012). As CRM systems provide one-way interaction that flows only from the organization



to its customers (knowledge flow is one-directional), it is important to note the role of Web 2.0 in transforming the manner in which individuals and firms interact and collaborate via the Internet today (two-way collaboration). Communication, which was previously restricted to two individuals, has now broadened to a wider audience with the use of Internet technology via Web 2.0, through blogs, wikis, communities, news, e-mails, online television, websites and the firm's interactive platform for its customers (existing and new), to name a few. The advancement of Web 2.0 has encouraged and persuaded this digital environment to innovate and produce modern tools and interactive platforms (LinkedIn, Facebook, Twitter, and so on). Web 2.0 also empowers cultures and societies to operate, access, familiarize and generate knowledge in quality and quantity more rapidly at minimal costs and suggest vast opportunities for boosting business and economic sustainability. The use of Web 2.0 has facilitated amplified social participation, self-profiling (Ryals and Knox, 2001; Sigala, 2008), social networking, reinforcing democracy (Levy, 2009; Barsky and Purdon, 2006; Alavi et al., 2011), vying in a global business environment, eliminating obstacles to modernization, and has overall revolutionized the once static society to create an interactive society now. Considering a social ecosystem that involves interaction and collaboration between various actors and elements, there is a purpose for the alliance and association for a desired outcome that involves feedback, reviews, product/service information and similar brand interest, amongst others. To date, CRM systems have been researched as a technical entity related to a particular firm, or as a case for failure and success (Table 17.1); and Web 2.0 has been analysed individually as an advancement in Internet technology, but not much has been explored about the accommodation of Web technologies in the existing CRM strategies. Web 2.0 provokes social intervention and social experimentation that can enhance the roadmap planned under the CRM strategy of a firm. There have been very few articles that have integrated both the concepts of Web 2.0 and CRM and branded it as 'Social CRM' or SCRM, as there is little knowledge or expertise that can create a Social CRM environment. The technology–organization–environment (TOE) framework that Oliveira et al. (2011) developed in the 1990s presents a perfect platform upon which to base the inclusion of SCRM in CRM strategy, because both of these discuss and classify three important facets – namely the technological context, the organizational context and environmental context – within an enterprise that impacts upon the process of adopting and implementing a technological innovation. While in a technological context, the SCRM phenomenon emerging from Web 2.0 represents both the internal and external technologies relevant to the firm; the explicit and tacit knowledge present within

*Table 17.1 CRM failure*

Authors	CRM failures
Rigby et al. (2002)	1. Implementing CRM before creating a customer strategy 2. Rolling out CRM before changing your organization to match. 3. Assuming that more CRM technology is better. 4. Stalking, not wooing, customers.
Mithas et al. (2005)	The propensity of firms to avoid the important data transformation and convergence' processes including all transactions, interactions, and networked touch points.
Dong and Zhu (2006)	Lack of business value derived from CRM investment; 41% of the firms with CRM projects were either experiencing significant difficulties or close to failure.
Stringfellow and Bowen (2004)	55% of CRM projects are not expected to produce results. A lack of commitment to the CRM system, its associated actors and customer focus leads to the highlighted failures.
Frow et al. (2011)	Failure due to tactical issues, including quality of data, project management and technological skills, and strategic aspects of CRM implementation.
Zablah et al. (2005)	CRM implementation initiatives have ended in failure; failure rate ranges from 35% to 75%.
Bolton and Tarasi (2007)	The collection of the data does not imply the existence of useful information that will be disseminated and acted upon appropriately.

a firm, the scope (products and services) and the size of the firm and the structure of management can be categorized under the organizational context. The firm that manages its business with its consumers, competitors and political elements can be then classified under the environmental context. The TOE framework offers a useful analytical framework that can support investigation of the adoption and integration of different types of technological innovation such as SCRM concepts originating from Web 2.0 and the CRM domain. I refer to this framework as it has a concrete theoretical basis, consistent historical empirical support and the prospect of application to technological innovation domains. This research also mentions some articles on SCRM as references supporting the chapter. The chapter starts by focusing on CRM strategy, CRM systems, Web 2.0, Semantic Web and its associated tools, and moves on

to explain the concept of SCRM and discuss the place and value SCRM currently has and may create in future.

## SWITCHING GEARS WITHIN STRATEGIC CRM

Customer relationship management or CRM has been defined in numerous contexts, as and when CRM as a strategy emerged. Although researchers, scholars, marketing experts and champions in various customer-oriented professions have delved into this constantly developing, important topic and recognized it in different ways, the main crux has always revolved around strategy, people, technology, capabilities and processes (Kevork and Vrechopoulos, 2009; Chen and Popovich, 2003; Xu et al., 2002; Zablah et al., 2004). Viewing the classic definition of traditional CRM theorized by Paul Greenberg (2009), where he states that ‘CRM is a philosophy and a business strategy supported by a system and a technology designed to improve human interactions in a business environment’, firms are recognizing that their customers have different economic significance, and are thereby successively modifying their customer strategy by including communication appropriately (Reinartz et al., 2004). Firms are also constantly shifting from a product- or service-centric approach to a customer-centric approach. Increasingly, organizations are highlighting their CRM strategy, emphasizing the customer-oriented processes where the elements of Web technology are unified into the CRM systems, facilitating the business process related to marketing, sales and services (Reinhold and Alt, 2012; Torggler, 2009; Deng et al., 2009; Osarenkhoe and Bennani, 2007; Frow and Payne, 2009). Payne and Frow underline Boulding et al.’s (2005) thoughts that ‘strategy’ resides at the core of any successful CRM. Fan and Ku (2010), Campbell (2003) and Sawhney et al. (2005) argue that an organization venturing into CRM initiatives should evaluate the growth opportunities that are available in the business ecosystem and choose the customer relationships that are suitable in nature for the planned customer segments.

For a successful CRM, a customer first should be categorized as a crucial stakeholder for the future success of the firm, rather than regarding them merely as a consumer. A successful CRM also takes into account an organization’s current situation in the market and its customers, around which the strategy is planned (Greenberg, 2009; Ata and Toker, 2012; Boulding et al., 2005). A business strategy should be the first step to decide how a customer strategy needs to be established, followed by forecasting the evolution over time (Woodcock et al., 2011; Ang, 2011; Greenberg, 2010a; Tollin, 2002). While a business strategy process can be initiated

with an analysis and vocalization of a firm's foresight, specifically when it relates to CRM followed by the investigation of the industry and its competitive ecosystem (Payne and Frow, 2005; Frow and Payne, 2009), a customer strategy involves exploring the current and probable customer base and classifying which forms of customer segmentation are the most suitable (Zahaya et al., 2004; Pavicic et al., 2011; Sofianti et al., 2010; Kumar, 2008; Reinhold and Alt, 2012). Segment granularity plays an important role, involving assessments of a suitable macro, micro or one-to-one segmentation approach (Rubin, 1997). Many authors underline the capability of shifting to one-to-one marketing from a mass-market environment by utilizing the essential economic features of the Internet that can empower a rooted level of segmentation granularity (Peppers and Rogers, 1993; Tseng and Piller, 2003; Wells et al., 1999; Piller et al., 2004; Pitta, 1998).

Having said that, it is crucial to focus on a few important aspects that must be infused in CRM strategic initiatives, namely meaningful advancement in services by integrating satisfaction, information and communication technology that involves loyalty and advocacy, aspects related to people implicating culture transformation, new interactions between individuals and group, the realization of changing expectation and customer behaviour, and personal agendas (Foss et al., 2008; Anshari and Almunawar, 2011). Following which, if the CRM strategy is enhancing the profitability and quality of the product and service including the realistic price strategy, then it can be said that the firm is moving in the right direction and holding a strong position in the market (Zineldin, 2006). That explains why CRM strategy necessitates a cross-functional integration of processes, people and technology (CRM systems and Web 2.0).

## THE PROCESS LINKAGE

Process is one of the important pillars of CRM strategy. Its role is crucial, as CRM is a cross-functional, customer-driven, technology-integrated business process management strategy that exploits relationships and embodies the entire organization for facilitating marketing, sales, service and other customer-oriented processes. That is why a customer-centric organization impeccably integrates business processes and marketing to handle customers and react to market pressures. Business process management assists the formation of the logical cores of CRM, which are (to name a few): lifetime value, customer profitability, retention, relationship marketing and satisfaction (Sahaf et al., 2011; Kumar et al., 2010; Osarenkhoe and Bennani, 2007; Roberts et al., 2005; Gummesson, 2004;

Kim and Lee, 2007). CRM can thus be portrayed as a blend of business process and technology (Faase et al., 2011) that aims to understand a company's customer from the standpoint of who they are, what they do and what they are like (Chen and Popovich, 2003). It is an endless activity that necessitates the restructuring of central business processes, beginning from the customer perspective to customer feedback. In general, firms tend to incorporate their central business processes, associate interrelated activities and eliminate the processes that do not benefit or add value to their customers. And for customer-focused firms aiming at customer processes, there is a need for 'knowledge' of a significant degree, because they deliver knowledge that customers request, process the knowledge received from their customers, and possess knowledge about their customers (Fan and Ku, 2010). CRM processes need transactional data that are automatically gathered and stockpiled in relational databases, and also a significant amount of knowledge from other sources (Greenberg, 2009; Bueren et al., 2004; Liao et al., 2010). Also, marketing, sales and service being the main business functions have a great level of direct customer interaction and operate in a knowledge-intensive environment. Bueren et al. (2005) rightly indicate that a CRM business process engages direct customer contact, exchanges information and services between enterprise and customer, and processes customer knowledge to fulfill the goals of relationship marketing. The customer initiates processes with the aim of receiving information and services and also at the same time the enterprise initiates processes with the aim of delivering information and services to customers. A CRM process consistently compels changes throughout the firm and with the whole-hearted consent and commitment of top management (Almotairi, 2008; Chen and Hung, 2010; Coltman, 2007; Lin and Lee, 2006; Ernst, 2002). Kumar et al. (2004) regard CRM as the process of realizing and retaining an ongoing relationship with its customers across multiple customer touch points via distinct and tailored treatment of individual customers created on their possible responses to the substituted marketing programmes, so that the involvement of each customer towards the whole profitability of the firm is maximized. Boulding et al. (2005) decipher the scope of CRM as an encompassing strategy, acquisition and dissemination of customer knowledge to appropriate stakeholders, intelligent use of data and technology, management of the dual creation of value, development of appropriate (long-term) relationships with specific customers and/or customer groups, and the integration of processes across the many areas of the firm and across the network of firms that collaborate to generate customer value, thereby reiterating the importance of processes in CRM.

## POWER OF PEOPLE IS PIVOTAL

While technology and business processes are both crucial to fruitful CRM initiatives, it is the people within the organization that continue to remain the focal point of customer relationships (Goldenberg, 2000). Implementation of relationship activities in a firm develops the social and structural bonds which integrate people, organizational systems and processes together. Investing in people is the most important task because internal relationships are as important as external relationships. Execution of a relationship alignment is derived from the people in the firm who understand the goals set and meet the essential standards (Donaldson and O'Toole, 2007). Constructing, altering and operating a CRM solution comprises many important actors, who include systems experts, business analysts, backroom operations specialists, managers who use customized reports to fine-tune sales, marketing and customer service strategies, and the frontline sales and service agents who are accountable for recording data that the CRM initiative needs to further generate rich insights (Roberts et al., 2005). Donaldson and O'Toole mention the core dimensions of relationship strategy implementation as being organizational structure, team-based structure, the staff and the style that managers use to define the outcome of an implemented strategy by setting up relational systems (for example, sales service processes, supply chain management system, relationship performance scorecards and the order fulfillment system). But that is one side of the coin. The other, as Boulding et al. (2005) highlights, is that little attention is given to people issues and debates in an organization despite the fact that employees are a fundamental part in the delivery of CRM activities. Add to that concerns from the consumers' or customers' point of view, and what you have is a cause for worry. Customers believe that firms use CRM with a strategic agenda, which sows the seed of mistrust in their minds. They are then cautious while observing the firm's behaviour and prefer to retain the power to strategically initiate interactions with the firm (Yang et al., 2010; Lin and Lee, 2006). The real question from the consumers' viewpoint is whether the firm will use the gathered information and data, and whether it will help the consumer in return (Boulding et al., 2005). It is therefore important to note that while technological processes and CRM systems are critical for CRM strategic initiatives, without proper human interaction with these processes and systems, the return on investment (ROI) for a firm is at risk (Al-mashari and Zairi, 2000).

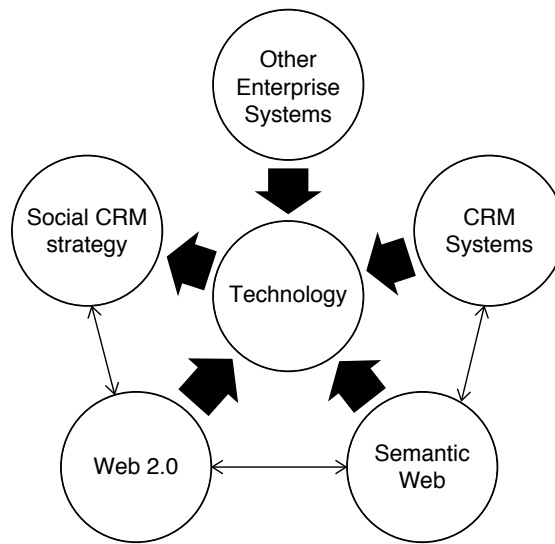


Figure 17.1 Elements of technology

## TECHNOLOGY ESSENTIALS

### CRM Systems as Business Enablers

From people to technology: a lethal and indispensable combination. The socio-technical system can be deemed as a purposeful collaborative system or a social work system. It comprises the collectiveness of the social aspect (people), the ecosystem and the technological element (see Figure 17.1) (Heller, 1997). In order to reap the benefits from the collaborative architecture, the technology and people have to be combined within a system, as they cannot be maximized separately. The use of a socio-technical system could be a joint optimization technique to be employed towards a determined objective. Socio-technical systems take the notion of an ‘open system’ for analysing, describing, designing and managing the environmental complexity and competition (Appelbaum, 1997). Working on relationship-building agendas can be reinforced by technologies via CRM systems that permit the firms to gain insights into the behaviour of their customers and produce crucial information about those customers. Interfunctional assimilation of processes, people, operations and marketing know-how within the organization are enabled through CRM systems and applications (Choy et al., 2004). The prominence of technology in assisting CRM strategic initiatives is represented by the challenges, which define that notion. CRM is outlined as the association of business

strategies and business processes to create customer loyalty and profitability that is enabled by technology (Rigby et al., 2003). CRM systems generally depict a single point of all data linked with customer processes and the functional aspect to manage them (Reinhold and Alt, 2011). They are a composite assimilation of hardware and software applications that involves a detailed analysis of the firm's business processes (Bose, 2002). For firms moving forward to adopt CRM applications in order to improve customer satisfaction, it is worthwhile to focus on understanding and fulfilling the needs of customers by choosing an appropriate CRM technology and developing a CRM attitude on customer-facing business processes (Stone, 2009; Ali and Alshawi, 2004; Stefanou et al., 2003).

### **Web 2.0: The Showstopper**

Technology took a new leap with Web 2.0. O'Reilly coined and introduced Web 2.0 as a network platform, spanning across all connected digital devices and idiosyncratic channels illustrated by user participation, openness, ease of collaboration and sharing and network effects (O'Reilly, 2007). Web 2.0 technologies offer the capacity to partake in multidirectional communications giving the liberty and opportunity for interaction, engagement and collaboration with the known and the unknown stakeholders (Black and Jacobs, 2010; Kamel Boulos and Wheelert, 2007). Social networking sites (SNSs), information aggregator sites, blogs and wikis, amongst others, can be categorized under Web 2.0 technologies, which is altering the dynamics of current businesses with the help of knowledgeable consumers and their collective intelligence. Firms have been innovating and creating new business models such as the crowd-sourcing concept, a community-based model, for exploiting the knowledge of customers, employees and partners. Constant development of Web 2.0 technologies helps to recognize new products and services for consumers. But that was not always the case. Faase (Faase et al., 2011) complements Reinhard's (2009) statement which says that before the evolution of Web 2.0, the Web was not considered as a competitor and a threat to broadcasting, since Web 1.0 was just an information and transaction medium, whereas now Web 2.0 is used as an advertising and entertainment medium. Faase et al. (2011) use the deductive comparison approach and classify the seven principles and the fundamental aspects of Web 2.0. Through the Web 2.0 platform, the traditional knowledge management with the centralized knowledge repository has transformed into a more interactive conversational approach (Lee and Lan, 2007). Hossain and Aydin (2011) take the Web 2.0 dynamics a bit further by presenting the participation in virtual communities to practice effective multicultural learning, skills and



self-educating with no or minimum cost, thereby highlighting the breadth of its reach and use.

### **Semantic Web or Web 3.0 and More**

Tim Berners-Lee, the director of the World Wide Web consortium (W3C) and prime architect of the Semantic Web, said: 'The goal of semantic Web is to be a unifying system that will (like the Web for human communication) be as un-restraining as possible so that the complexity of reality can be described.' With the Semantic Web, it will be easy to recognize a variety of tools and applications that are difficult to handle in the framework of the current Web (Li and Horrocks, 2004). It delivers a response to the demands and requests for the existing and evolving volumes of data within the online communities to a phenomenon represented by information sharing, cooperation and collaboration (Capuano et al., 2010). According to Berners-Lee, the Semantic Web is not a new Web but a natural extension of the World Wide Web; it has the potential to revolutionize the way we look at the oceans and, in effect, allows us to protect our endangered environment and dependent fragile ecosystems (Le, 2008). Taking it a step further, the Semantic Web initiative, or what is touted to be Web 3.0, brings non-human content, which includes services, applications, bots and other automated components to the consumers (Kobielus, 2007). Although the touted development is laudable, it must be pointed out that the foresight precedes the intensification of Web 2.0 and has not accounted for Web 2.0 completely. The current market dynamism has thus forced the Semantic Web community to give Web 2.0 a closer look, particularly its applications and tools (Ankolekar et al., 2007).

## **THE INEVITABLE ROLE OF SCRM IN CRM STRATEGY**

Amidst the co-existence of all components of CRM strategy (Figure 17.2), voices are getting louder to include Social CRM as one of its main pillars. After all, Social CRM is an innovative concept that combines social media technologies with CRM strategy, CRM systems and other CRM initiatives in order to enhance customer rendezvous (Greenberg, 2009). Paul Greenberg (2009) conceptualizes SCRM in a classic definition by stating that: 'Social CRM is a philosophy and a business strategy supported by technology platforms, processes and social characteristics, designed to engage the customer in a collaborative conversation to provide mutually beneficial value in a trusted and transparent business environment'.

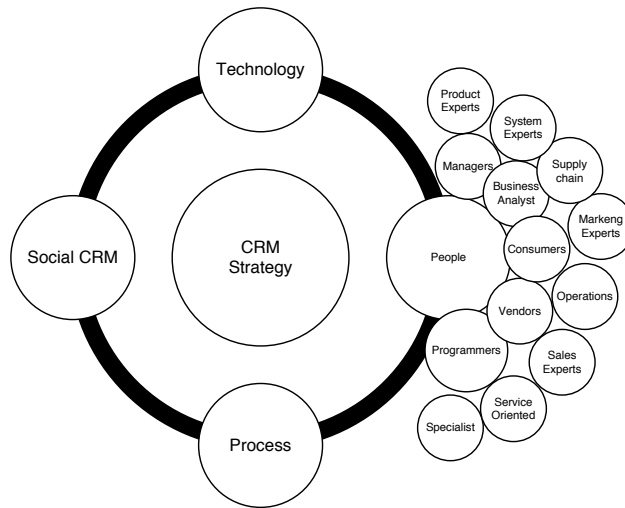


Figure 17.2 Elements of CRM strategy

This collaboration can be garnered through SCRM activities, which are constructed around users, user-generated shared content and the constant usage of Web 2.0. While privacy can be a bone of contention in this collaboration process, the value of SCRM activities in CRM strategy cannot be denied, if the motive relates to the firm's business. For organizations that use SCRM or Web 2.0 approaches (Table 17.2), knowledge generated from the content of the conversations may be helpful within a business for understanding customer segmentation, to establish proper communication and to rightly comprehend opinions, expectations and relations. One particularly fascinating and potentially explosive opportunity is that the customer or a consumer as a social element creates new prospects and insights through the actionable knowledge brought via different Web 2.0 platforms in real time. The process of SCRM focuses to bring business value to firms, altering the outputs of the strategy development process into active agendas by extracting and delivering value. This social phenomenon can determine the value that the company can provide to its customer, establish the value that the company can obtain from its customers, and efficiently manage the value exchange, which involves a procedure to co-produce, co-create and increase the lifetime value of its desired customer segments. Regrettably, there are no SCRM products or social softwares available.

Baird and Parasnis (2011) state that the implementation of a Social CRM programme is still in its early stages in many companies, and execution is unreliable with ROI concerns. Currently SCRM is being derived from various Web 2.0 services that have been mildly integrated in a CRM

Table 17.2 Social CRM initiatives

SCRM facilitated firms	Challenges	SCRM constituents and its functionalities
MTS	Negative sentiment on the Web. Listen and monitor online conversations. Customer engagement with unhappy customers. Predict and manage situation with potential of full-blown crisis for the brand.	Engaging online communities, customer care executives, management and online properties of the brand. Social media monitoring tool to track online conversations. Aggressively engage unhappy customers by offering them speedy solutions.
Best Buy	Customer engagement, providing support, customer advocacy, providing recommendations across multiple channels, in a scalable and manageable way.	Social and community team, monitoring blogosphere, social online community, twelpforce.
Fiskars	Boost specialty store sales, customer engagements, product innovations and developments.	Blog, fiskateers.com, live events, message board, online tools.
Finnair	Service improvement, addressing negative feedback.	Finnair Blog, quality hunters, travel blog, basic online tools.
Telfonica	Customer satisfaction, customer engagement.	Online community, forum, crowdsourcing of ideas, customer participation, hilfe.o2online.de.
Starbucks	New products, innovation, reach.	Starbucks Gossip, My Starbucks Idea, social media monitoring, online communities, idea generators, mystarbucksidea.force.com.
Procter & Gamble	Customer connect, innovation.	Connect and develop, vocal point, being girl.
Dell	Support, addressing issues, product and service innovation.	Forum, communities, connect.dell.com, user-to-user interaction.

Source: Internet data.

environment. And given the popularity of the Internet, a collaborative ecosystem is being created by involving SCRM as one of the main pillars of CRM strategy. To copiously recognize and use the power of social media to enable firms to associate with their customers, they need to amalgamate platforms that use Social CRM to reinvent the customer

relationship (Pavicic et al., 2011). So, while blogs, forums, communities, and so on have been a part of the CRM strategy, the important question is whether we should categorize them as elements of SCRM. Because if these Internet-dependent and open information portals can be grouped into one category (that is, under the umbrella of a social component that can contribute, induce knowledge sharing and fill the gap that the CRM as a strategy is facing to be successful), then it is about time that SCRM should be the core of any CRM strategy.

SCRM is a new strategy and a system that assimilates Web 2.0 and the influence of online communities in parallel with traditional CRM systems, for inspiring customers to play an important part alongside the firms in formulating decisions that have an impact on creating sensible conversations and high-quality relationships between firms and customers (Woodcock et al., 2011). It is clear that SCRM is not just a technology or a system as it includes several components that need to be taken into consideration in order to offer value for the organization and its customers (Reinhold and Alt, 2012, 2011; Faase et al., 2011). That then means that networking, collaboration and participation through SCRM systems (Figure 17.3) must be a standard and not an expectation (Gurau, 2003; Askool and Nakata, 2010b). SCRM is the connection of social data, wherever it may reside, with existing customer records or customer databases which empowers firms to provide new forms of consumer insight and appropriate context (Woodcock et al., 2011). To the best of my knowledge and research, there is little or limited literature presented (Table 17.3) that

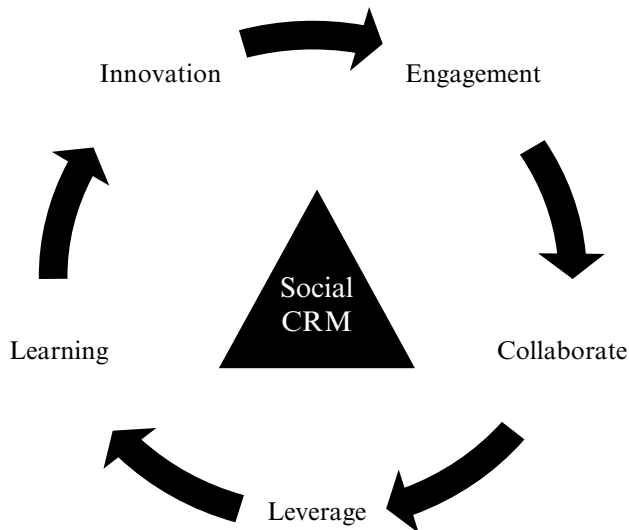


Figure 17.3 Framework for SCRM strategy

Table 17.3 SCRM literatures

Authors	Describing SCRM
Reinhold and Alt (2011)	Investigates the requirements of SCRM and the role of analytical SCRM in integrated SCRM systems, analyses available solutions with their shortcomings and develops a blueprint of an analytical SCRM system.
Almunawar and Anshari (2012)	Lays the foundation for developing a system for managing customer relationships using Web 2.0 technology and Social CRM in the health care industry.
Faase et al. (2011)	Defines social CRM and to create an understanding of the concept.
Mohan et al. (2008)	Discussion on how social networking helps organizations to increase their customer life cycle and to acquire new customers by developing a conceptual architecture merging the CRM System with Social Network Engine and Web 2.0.
Askool and Nakata (2010a)	Describes a set of factors believed to influence the adoption of SCRM and provides a conceptual model of SCRM usage and acceptance followed by a discussion.
Deng et al. (2009)	Defines the key components of Social CRM application that aims at finding the potential needs of customer and translating it to sale opportunities by integrating outside information sources and leveraging Web 2.0 concepts of collaboration and community based on service-oriented architecture (SOA).
Ang (2011)	Defining whether SCRM is a really good social media strategy.
Zhang (2011)	Investigates the optimal level of social software for a firm which maximizes its transactional benefits through managing a consumer knowledge system. The system consists of a customer knowledge base and social software that dynamically affects the customer knowledge base through customers' interactions.
Li et al. (2012)	Literature reviews of social network service, social system of enterprise and collaborative product development (CPD). Suggestions on system architecture and function of enterprise social collaboration platform. Describes product catalogue sharing and synchronization from enterprise resource planing (ERP) to its dealer or customer. A deduction of the development and application of a social collaboration platform.
Woodcock et al. (2011)	Understanding SCRM as a business strategy
Baird and Parasnis (2011)	Reinventing the customer relation via Social CRM
Greenberg (2010b)	How CRM 2.0 impacts upon customer insights. Incorporation of social tools and strategies with traditional operational functions.
Greenberg (2009)	Book focusing on Social CRM

specifically concentrates on Social CRM. I have thus collated the available research writings and findings on traditional CRM, Web 2.0 and Semantic Web to highlight the importance and need for SCRMM to be included in CRM strategy.

## DISCUSSION AND CONCLUSION

The constant evolution of Web 2.0 has given rise to Social CRM with a mature collaborative channel and knowledge source for both firms and their customers. This chapter focuses on the core elements for SCRMM and its deployment, where stakeholders within the firm and outside are interconnected. It exemplifies that SCRMM revolves around CRM processes by enhancing the CRM strategy through social platforms. That is also because the customer information and product/service knowledge emerging from SCRMM can complement CRM strategic initiatives and help in satisfying the customer's needs. It is the company's response to the customer's ownership of the conversation. Nevertheless, there exists bewilderment about how SCRMM initiatives can be incorporated and implemented, and what are the infrastructure essentials to construct it. SCRMM as an emerging concept has been around for some time but is still in its nascent stage in terms of use and benefits (Greenberg, 2010b). For now, it is certain that Social CRM can be described as an extension to traditional CRM, but not a 'replacement' for traditional CRM. Wahlberg et al. (2009) label it as an extension of collaborative CRM, describing it as one of the main pillars of traditional CRM (Iriana and Buttle, 2006; Askool and Nakata, 2010a). SCRMM can be recognized as a separate entity that concentrates on customer engagement, generating comprehensive and effective customer knowledge rather than just customer transactional data. There is a definite need for deep integration of SCRMM capability into the functions and processes of the organization for further automation. This chapter presents a few of the many SCRMM cases that are emerging even though the concept of SCRMM is in its nascent and testing stage. This research tries to provoke and motivate readers to investigate SCRMM further and find the missing constituents that could make SCRMM close to perfect and find a permanent place in a firm's CRM strategy. Future research could include more relevant case studies on SCRMM strategies and tools and highlight its capabilities and limitations.

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## **ARTICLE II**

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## Positive Disruptions Caused by SCRM Activities in the SECI process of Knowledge Creation: Insights from Four Case Studies

**Pradeep Durgam**

Aalto School of Business, Finland  
pradeep.durgam@aalto.fi

**Ankur Sinha**

Aalto School of Business, Finland  
ankur.sinha@aalto.fi

### Abstract

*Web 2.0 has been in the foray for a while playing an important role in threading business processes, various departments, systems and key stakeholders (within firms) to activate customer participation and involvement. In order to re-emphasize customer centricity, firms have been using SCRM (Social Customer Relationship Management) approach as a part of their CRM (Customer Relationship Management) strategy. The activities under SCRM are a major source for organizational knowledge creation that occurs due to a continuous dialogue between tacit and explicit knowledge. Also, various social platforms (operating for SCRM) where collaboration takes place acts as a shared context for knowledge creation. To comprehend the actions and limitations of a knowledge-creating firm thoroughly, this research paper examines the process of knowledge-creation by (1) revisiting Nonaka-Takeuchi SECI (Socialization, Externalization, Combination & Internalization) process to recognize how SCRM activities can be prolific in organizational knowledge creation (2) exploring positive disruptions created by integrating SCRM activities with four modes of SECI process for additional knowledge creation (3) analyzing case studies of four firms from consumer products sector that use SCRM approach and (4) discovering the elements under SCRM approach that satisfy 'BA' as a shared context.*

Keywords: SECI, Knowledge Creation, SCRM

### 1 Introduction

In the past decade business world has been transformed into a knowledge intensive ecosystem. Though firms are aware of knowledge creation, only lately have they realized the importance of knowledge creation. Firms can create new knowledge themselves (internally) just with the support of their resources (employees, systems, strategies, etc.), (Nonaka, Toyama, & Konno, 2000) but there are boundaries and limitations after which they cannot attain appropriate tacit knowledge for competitive advantage (Nonaka, 1994a). To

consistently create new knowledge, firms must collaborate (externally) with the environment in order to expand its knowledge base and simultaneously withstand and amplify their competitive advantage (Pralhad & Ramaswamy, 2004). Furthermore, in order to adjust accurately with ever-changing dynamics of the market, firms have to acquire 'specific' knowledge from the environment to create new products and services. We, as humans (individuals) with variable capacities define this environment. Adding to it the knowledge intensive society has changed human thinking in a productive way and at the same time restructured business processes related to organizational knowledge creation (Mukhtar, Ismail, & Yahya, 2012). Individuals from both sides (organization and larger ecosystem) play a crucial role in knowledge creation using web technological advancements. From the organizations' side, human resources (employees) take active part to acquire and create new knowledge, and from the ecosystems' side, customers (as crucial stakeholders) share knowledge and experiences with the organization to help create new specific tacit knowledge. For this to happen firms should develop their knowledge creation capacity in order to positively provoke the customer to participate, collaborate and share their know-hows (Nonaka & Toyama, 2002). The more access organizations have to their customers, the higher is the knowledge creating capacity. And here, Web 2.0 known as the social web has created a smooth passage for collaboration with customers (existing and new). This social web has propelled the knowledge creating capacity through its features of user-generated content, social networking, wider reach, multiple-way communication and the ease of use (Faase, Helms, & Spruit, 2011). The core function of social web designed by organizations is to facilitate customers to participate and create new knowledge (Sawhney, Verona, & Prandelli, 2005a).

The significance of social web has been realized only after the functionality of CRM systems, which seems to have reached its capability limit of acquiring 'accurate' customer knowledge relevant to the marketplace (Baird & Parasnis, 2011). While CRM systems used for customer forecasting through historical or transactional knowledge (stored in the database) has lacked the swiftness in capturing the current customer experiences, the social web applications has filled the gap by acquiring and creating contemporary customer knowledge. The unification of social web into CRM activities (mainly CRM systems) has been striving to complete the connotation of SCRM approach (Reinhold & Alt, 2012). The SCRM activity that involves social media technologies (online communities, blogs, firms interactive web pages, emails, etc.) is an excellent source for knowledge creation that leads to an increase in specific organizational knowledge. Having said that, firms create knowledge by a constant exchange of tacit and explicit knowledge on collaborative platforms between organization and individuals (existing or to-be customers) complementing the Nonaka-Tekeuchi SECI process (Nonaka et al., 2000). The SECI model of knowledge creation has four processes; namely socialization (tacit to tacit), externalization (tacit to explicit), combination (explicit to complex explicit) and internalization (explicit to tacit). These processes are explained in the sections ahead. The core elements that define SCRM approach construct a shared context, known as BA' (BA' - (Nonaka & Konno, 1998)), where there is an online setting created for sharing and creating knowledge. That then explains how the implementation of SCRM approach has reduced the need of a physical space where two or more individuals have to be present in person to create knowledge, making the exchange of tacit and explicit knowledge virtual (online). Moreover, the introduction of SCRM activities (firm specific-Social Media,

blogs, online communities, etc.) has brought in positive disruptions in the regular pattern of SECI process of knowledge creation. Also, these disruptions have increased the ability to create additional organizational knowledge with higher relevancy. These disruptions too are explained in this paper and substantiated with evidence found in case studies.

The paper is structured as follows. The first section describes the dimensions of knowledge creation focusing specifically on SCRM. The second section theorizes and conceptualizes the influence of SCRM activities on SECI process. This section also explores the positive disruptions caused by integrating SCRM activities with four modes of SECI process for additional knowledge creation. It extends to identify the core elements of SCRM approach that represent 'BA' – a shared context for knowledge creation. The third part provides four case studies as evidence for SCRM activities being an excellent source for knowledge creation followed by the analysis of pattern change (positive disruptions) within SECI's process. The paper concludes with a summary and discussion, revisiting the main points covered and throwing light on future research.

## **2 Constituents of organizational knowledge creation in the socialized world**

### *Tacit and Explicit knowledge*

While explicit knowledge is termed to be objective and rational in nature, tacit knowledge is considered idiosyncratic, experimental and difficult to validate (Nonaka, Reinmoeller, & Senoo, 1998). That's perhaps why, explicit knowledge is expressed in the form of concrete instructions, documents, mathematical formulas, particular actions and guides and tacit knowledge comes in the form of beliefs, viewpoints, intellectual models, philosophies and principles (Nonaka, Krogh, & Voelpel, 2006). But there is a point where these two seemingly different concepts of knowledge collide (with the help an external factor - social platform) to create 'new' knowledge (Polanyi, 1966). For instance, idea generation happens in the minds of individuals (tacit knowledge) and a social collaboration between two or more individuals plays a significant role in developing these ideas further (making it explicit).

### **2.1 Social Web as the driving force for social experimentations**

A significant technological innovation that organizations have incorporated into their enterprise and specifically into their CRM strategy is the Social Web. This Social Web with its dynamic capabilities has helped organizations find ways to accommodate innovative methods of sharing and creating knowledge (Kaplan & Haenlein, 2010). To name a few, customer collaboration, two-way knowledge transfer, product/service specific discussions and feedbacks are the fundamental consequences of Social Web, which ultimately has lead to knowledge creation (Bolton et al., 2013). In addition, social networking sites, online communities, blogs and investments in enterprise 2.0 have offered platforms for Social Web to be prosperous. And because of these platforms there has been a huge influx of customer knowledge, which has allowed firms in saving costs, improving product/service innovation and redefining non-profitable products/services (Razmerita, Kirchner, & Sudzina, 2009). These Social Web platforms are facilitating the creation of new organizational knowledge that

allows customer retention, proper segmentation and campaign management, amongst others (Baird & Parasnis, 2011). To extend it further, knowledge creation on Social Web occurs through productive collaboration and constant sharing of experiences between disseminated groups within a firm and various communities outside the firm (Razmerita et al., 2009). However, the existence of Social Web will depend mostly on its capability to face the challenges of knowledge creations (Greenberg, 2010). Having said that Social Web is an excellent platform to connect two entities for business purposes; it can only be used as a channel and hence cannot be replaced or treated as a main application for core business (finance, operations, etc.) (Askool & Nakata, 2010). Therefore the applications of Social Web tremendously support the central functions of NPD, Marketing, Sales, Design and Services. However, the Social Web is signified by a set of websites and functions where the user (customer) with his or her participation is the primary driver for organizational knowledge creation. Also, these users have modified Web 2.0 as a living web. From a low interaction function like RSS feeds, wikis, tags, blogs, etc. to a high interaction function like Facebook, Twitter, online communities, organizational interactive feedback and interactive service webpages fall under the umbrella of Web 2.0. What makes this Web 2.0 a Social Web is the coming together of wisdom of online crowd, specific user generated content and collective intelligence to name a few.

## **2.2 The SCRM approach for customer knowledge creation**

An SCRM activity includes Internet based applications constructed on the technological and conceptual fundamentals of Web 2.0. To be firm specific, it is combined with various CRM processes and strategies, allowing the informal creation of knowledge. Also, certain business practices functioning under CRM strategy has evolved as socially enabled processes (Lehmkuhl & Jung, 2013). Due to its lightweight and technical feasibility (Levy, 2009), SCRM is described as an innovative notion that connects social media technology with CRM strategy. Although, social technology can support collaboration, it requires organizational users and customers to create knowledge for sharing. Although, there are boundaries when we discuss about knowledge management and knowledge creation just within firms (Dous, Salomann, Kolbe, & Brenner, 2005), but these limitations tend to fade out when creating knowledge, specific to the firm through SCRM activities (Roblek, Bach, Meško, & Bertoncej, 2013). Having said that, Social Media majorly defines SCRM where collaborators are not particularly asked to share knowledge, but this knowledge is automatically created by its daily usage (Jr, 2007). Therefore, effective structuring of SCRM activities in accordance with CRM processes builds a foundation for gathering direct understanding into thoughts, objectives and behavior of the users involved. Before the advent of Social Media, CRM strategy for a firm included processes and technologies configured to effectively handle customer relationships as a source for unearthing maximum value from their customers over a certain period of time (Akroush, Dahiyat, Gharaibeh, & Abu-Lail, 2011). Also the past literature highlights the fact that firms' CRM strategies mainly focused on the operational responses required for managing their customers (Shaw, Subramaniam, Tan, & Welge, 2001) (Liao, Chen, & Deng, 2010) (Frow, Payne, Wilkinson, & Young, 2011). But with the emergence of social media, there is a significant two-way collaboration where firms are

providing customers a virtual platform to communicate, share their experiences and enable them to make rational judgments on how to collaborate and ultimately create knowledge for the firm.

## **2.3 The Pioneering model for knowledge creation**

### **2.3.1 Revisiting Nonaka's SECI process of knowledge creation**

In this knowledge intensive society firms are dealing with a constantly changing environment to process information and simultaneously create knowledge. Firms create knowledge through a dialog that occurs between explicit and tacit knowledge. Eventually, through this process of knowledge conversion, knowledge is created and expanded (in quality and quantity) (Nonaka, 1994b). To elaborate further, this research revisits the four processes of knowledge conversion and creation:

- 1) *Socialization process*, where tacit knowledge is shared between two or more individuals.
- 2) *Externalization process*, where articulation of tacit knowledge into explicit knowledge takes place making it the first stage of knowledge crystallization.
- 3) *Combination process*, which engages conversion of explicit knowledge into more complex sets explicit of knowledge.
- 4) *Internalization process*, where the newly created explicit knowledge is converted into tacit knowledge.

(Nonaka & Toyama, 2003) (Nonaka, 1994a) (Nonaka et al., 1998)

This SECI process highlights dynamic processes of self-transcendence, where firms' resources transcend their limitations by engaging in collaboration processes with their key stakeholders (customers) (Nonaka et al., 1998). In this contemporary world, communities of interaction provide a source for development of new knowledge. These social elements existing on technological advancements outline a new dimension for organizational knowledge creation. The process of creation begins when all four modes of knowledge creation are structurally organized to form a repetitive cycle. The basic comprehension is that individuals have to be present on both ends to create knowledge. The firms specify a context where it provokes and nurtures creative individuals to collaborate, share and create knowledge (Nonaka, 1994a).

### **2.3.2 BA as a shared context: The Ontological Platform for Knowledge Creation**

Ba, a Japanese term is a supportive space (physical or virtual) defined by a context for knowledge creation (Nonaka et al., 2000). 'Ba' can be perceived as a shared mental space, which triggers knowledge creating process for accumulating collective intelligence. Data, information and knowledge, all are rooted in these spaces and in the minds of individuals that are a part of these spaces. In these spaces or platforms, knowledge is attained through one's own understanding of the know-how of others. Ba can arise from groups or communities or between any two individuals. Therefore, Ba as a shared context gives the necessary support for SECI Process. There are four types of BA that integrate with SECI

Process and provide platforms for multi-dynamic knowledge creation (Nonaka & Konno, 1998).

*Originating BA (linked with Socialization phase):* Individuals communicate feelings, experiences, emotions, and conceptual models, which is the beginning of knowledge creating process or Originating Ba.

*Dialoging BA (linked with Externalization phase):* To create a dialoging Ba, there is need for choosing people with the right mix of specific knowledge and proficiencies, critical to activate conversion.

*Cyber BA (linked with Combination phase):* Explicit knowledge is combined with existing knowledge further creating new explicit knowledge, which is distributed in the firm.

*Exercising BA (linked with Internalization phase):* Enables the conversion of accumulated explicit knowledge (from the above processes) to tacit knowledge.

(Nonaka & Konno, 1998)

### **3 The influence of SCRM approach in SECI process for Knowledge Creation**

#### **3.1 Socialization-SCRM approach**

Socialization is termed as conversion of tacit knowledge to tacit knowledge derived from shared experiences by spending time in the same environment. This environment has so far largely been defined in terms of physical space but now tacit knowledge can also be obtained from a 'virtual' space, beyond organizational boundaries (M. Vuori, 2012). When firms frequently yield benefits from tacit knowledge rooted in customers through virtual ideation labs, collaborative online communities and personalized online chat application (Sawhney, Verona, & Prandelli, 2005b), new tacit knowledge is created. It is created over discussions and negotiations where different individuals share their experiences that are available for new interpretation resulting in new meanings (Shang, Li, Wu, & Hou, 2011). This process establishes collective intelligence bringing together variety of knowledge bases and capabilities representing firm's intellectual capital (Swan, Newell, Scarbrough, & Hislop, 1999). A significant way to nurture knowledge creation within a firm is to introduce ways for individuals to interact both within the company as well interact with external stakeholders (customers). For example, the various online resources under a specific firms' tag name facilitate content generation and community building postulating a brand new platform for knowledge exchange, knowledge creation and network development (Mahr & Lievens, 2012). Having said that the SCRM approach that includes the abovementioned activities amongst others, highlights innovation, discussions, product debates and feedbacks as progressively interactive (Reinhold & Alt, 2011) (Zyl, 2009). That's because these systems connect heterogeneous groups of individuals both within the organization as well as outside (Mahr & Lievens, 2012) (Bolton et al., 2013). As social media are used for creating, sharing and exchanging various kinds of content, the users contribute and provide value to the company's knowledge creation capability thereby highlighting the role of SCRM approach in Socialization.

*Originating BA:* Collaborative online communities, virtual ideation labs, personalized online chat, etc.

### **3.2 Externalization-SCRM approach**

Externalization is the process of articulating tacit knowledge into explicit knowledge. That is to say, crystallization of knowledge begins when tacit knowledge is made explicit. Considering firm's personalized blogs, web pages, wikis, online feedback and service webpages, amongst others are applications that support externalization process. These online applications offer freedom of expression and a source to acquire customers' personalized knowledge that is disseminated in discussions across web platforms. From an externalization point of view, collaboration through SCRM activities contextualizes the created content. Firms' interactive (online) feedback page and customer service webpage provide an excellent source of actionable collective intelligence, as they offer a place for social interaction (Ahlqvist, Bäck, Heinonen, & Halonen, 2010). That's crucial because in a social media space sharing one's unique know-how is the central source of tacit knowledge. For instance, companies like Trip advisor, Google, Apple, Dell, Starbucks, Procter and Gamble (Connect and develop) facilitate a constant knowledge creating process from socialization and externalization of knowledge (through online platforms), reiterating the growing significance of SCRM activities.

*Interacting BA:* Service and Network interactive webpages, blogs, interactive feedback space.

### **3.3 Combination-SCRM approach:**

Combination signifies conversion of explicit knowledge into further complex sets of explicit knowledge, creating new set(s) of knowledge. Therefore, re-organizing of existing knowledge by the process of sorting, accumulating, re-classifying and re-conceptualizing of explicit knowledge builds new knowledge (Nonaka, 1994a). Having said that, web based application has also contributed where combination of explicit knowledge is efficiently handled in collaborative environments by exploiting social media networks, web portals, intranets, groupware and CRM databases (where knowledge is retrieved by the already defined functions and modeling process) (Nonaka et al., 2000). Hence, synergies and knowledge derived from online platform and the organizational database has the capacity to create new knowledge (Alt & Reinhold, 2012). And with the current Social web advances such as wikis, blogs and collaborative platforms, give prospects for firms to develop their internal operations and collaborate with their business partners (Prahalad & Ramaswamy, 2004). Therefore, practices of social media can be exploited for improving existing business processes, creating new business models and banking on new sources of knowledge. Furthermore, this combination process delivers broad domain coverage, diversity of opinions, and good amount of specific knowledge (Kietzmann, Hermkens, McCarthy, & Silvestre, 2011). Higher the inflow of social knowledge (explicit) within an organization - better is the functionality of organization systems. That's because knowledge conversion encompasses the use of social media processes to combine explicit knowledge within individuals. For example, mash-ups, a social tool is used to extract content from various online sources and reproduced in a new form (Mohan, Choi, & Min, 2008). Here collective intelligence plays an important role by deciding what is appropriate via feedbacks, online reviews, ratings, recommendations and criticisms. Also, well-expressed artifacts are connected and combined in models through

social tools such as RSS syndication, social bookmarking, search engines, etc. (V. Vuori & Okkonen, 2012). Combination is thus embedded in knowledge processing of both existing organizational knowledge and social knowledge, derived from an efficient use of SCRM approach.

Cyber BA: Contemporary Social Media resources, online communities, etc.

### **3.4 Internalization-SCRM approach:**

Internalization is the process of expressing explicit knowledge into tacit knowledge. Once explicit knowledge is created from externalization and combination, it is shared among departments of the firm and then converted into tacit knowledge by individuals working in those departments. Personal experience (tacit), existing organizational knowledge (explicit-product, norms, service, transactional, historical, etc.), real world knowledge (explicit) and experience sharing from fellow functional departments (tacit), to name a few are expended in the Internalization process finally obtaining tacit knowledge for product/service innovation and development. To add to that, the Social web provides a flexible online space for firms to be an innovative entity by collaborating with consumers, sharing more knowledge in a collective way and then taking constructive advantages of the consumer's wisdom for product innovation (M. Vuori, 2012). From playing a passive role, online consumers with the support of the social web are becoming active participants in one or all New Product Development (NPD) phases' (Sawhney et al., 2005b). To complement it further, online platforms created by firms offer a space for online discussion (forums), for product design debates and for concept testing and product support activities. Consequently, within an online community, customers spontaneously disclose knowledge that incites others to further build on it with their own experiences (Kaplan & Haenlein, 2010). Thus, Social web creates a setting for individual customers to display their product-related knowledge and problem-solving skills (tacit knowledge made to explicit), which at the end benefits both, organizations and customers.

*Exercising Ba:* Online design platforms, social media resources, online review and feedback sites, etc.

### **3.5 Positive Disruptions within the SECI process**

The integration of SCRM activities has given different departments of an organization the opportunity and freedom to stay connected with their target customers at their discretion to create knowledge. So, different departments are connected online to understand 'live' dynamics of the users (ongoing participation, live feedback, co-creation, etc.) through which they tend to optimize their business processes and become more customer oriented. This paper establishes that incorporating SCRM activities within four modes (SECI) of knowledge conversion and knowledge creation leads to positive disruptions in standard patterns. According to (Nonaka et al., 2000)

The standard process within SECI process is the conversion of tacit to tacit knowledge, tacit to explicit knowledge, explicit to explicit knowledge and explicit to tacit knowledge. Every mode with the standard pattern of knowledge conversion between tacit and explicit reacts to the continuous feed of customer knowledge accessed through social platforms. This brings in disruptions in one or all stages of knowledge creation. Also, the knowledge acquired through



social platforms is mostly tacit in nature. Integration of such tacit knowledge at different steps of SECI process positively alters direct conversions from Tacit→Tacit, Tacit→Explicit, Explicit→Explicit and Explicit→Tacit (Figure 1). For instance, if tacit knowledge from SCRM approach is added into combination stage, then the standard knowledge conversion process is positively disrupted and knowledge conversion flows as Explicit→tacit→explicit→....→Explicit (Figure 1). Similar positive alterations have been observed in other stages of SECI process and have been explained later in detail with the help of case studies. Different firms use a permutation of the four modes of SECI (with an integrated SCRM approach) either separately or together. If these modes are used efficiently (all together) then the scope of knowledge creation increases tremendously.

It is important to note that these positive disruptions do not change SECI process in any way, but only adds value to the final outcome at every stage by creating additional knowledge.

Possible Influence of Social Web on the standard pattern of SECI process	
<p>Socialization: TACIT to TACIT</p> <p>Social Platforms as BA' and source</p> <ul style="list-style-type: none"> <li>• Online chat</li> <li>• Facebook</li> <li>• One to one online interaction</li> </ul> <p>Possible influence of Social web</p> <ul style="list-style-type: none"> <li>• TACIT → tacit or tacit or tacit... →TACIT</li> </ul>	<p>Externalization: TACIT to EXPLICIT</p> <p>Social Platforms as BA' and source</p> <ul style="list-style-type: none"> <li>• Personalized chat</li> <li>• Firm's Internal online communities</li> <li>• Online games and competitions</li> <li>• Use of Social analytical tools</li> </ul> <p>Possible influence of Social web</p> <ul style="list-style-type: none"> <li>• TACIT→explicit or tacit or explicit... →EXPLICIT</li> </ul>
<p>Internalization: EXPLICIT to TACIT</p> <p>Social Platforms as BA' and source</p> <ul style="list-style-type: none"> <li>• Online blogs</li> <li>• Online chats (old and new)</li> <li>• Observing conversations between users</li> </ul> <p>Possible influence of Social web</p> <ul style="list-style-type: none"> <li>• EXPLICIT→explicit or tacit or explicit...→TACIT</li> </ul>	<p>Combination: EXPLICIT to Complex EXPLICIT</p> <p>Social Platforms as BA' and source</p> <ul style="list-style-type: none"> <li>• Online discussion</li> <li>• Online Feedback and Review</li> <li>• Online opinion websites</li> </ul> <p>Possible influence of Social web</p> <ul style="list-style-type: none"> <li>• EXPLICIT→explicit or tacit or explicit-- →EXPLICIT</li> </ul>

Figure 1 Possible influence of Social Web on SECI process

## 4 Case Studies explaining the knowledge creation process

### 4.1 Designing the cases for analysis

This study through a qualitative research intends to contribute to the theory of organizational knowledge creation (SECI process) by introducing the SCRM approach and its key elements that facilitate creation of more knowledge. This research focuses on organizations that have an active SCRM strategy and aims to understand how the use of SCRM approach generates crucial customer knowledge for various departments and turns into an asset for the entire firm. The study maps the process of SCRM activities within the existing SECI process and

comprehends how Socialization, Externalization, Combination and Internalization process unfold in the online world. Keeping the focus on SECI process of knowledge creation, the interview questions (appendix 1) were both comprehensive and in-depth. For the purpose of this paper, four case studies representing four companies (15 interviews) from Consumer Products industry have been chosen. The case studies range from an increasing level of dependence on SCRM activities for customer knowledge creation to an already established SCRM approach as a principal pillar for CRM strategy. An organization where SCRM approach is already reputable, customer knowledge is created and used extensively, directly building the organizational knowledge for competitive advantage.

## **4.2 Profile of the companies interviewed**

Abiding by confidentiality norms of organizations included in this research, their names have not been disclosed. Nevertheless, brief descriptions about the companies have been provided.

- 1) A Mobile Tele-systems company that manufactures mobiles, Internet dongles and data products has started focusing on SCRM activities in the past year to acquire and retain customers. They are in the initial stages trying to involve customers and their knowledge in few business activities.

Tools used: Facebook, E-Commerce Plugin and Online Chat Operations.

- 2) A Cellular company with an integrated GSM operator providing 2G and 3G services has been using social media for online brand management for the past three years.

Tools used: Service Delivery online tool, Facebook and Personalized Blog.

- 3) A leading Brewery has been active online for more than half a decade (for brand awareness) with activities involving almost 6 million users on Facebook. Tools used: Facebook, Twitter, YouTube, Instagram, etc.

- 4) A widely renowned and trusted brand name in house and kitchenware products have been using Social Media even before the term was coined. The company is closely connected with its online customers at almost all levels. Tools used: Dedicated webpages on their website, Microsites, Blogs, Facebook.

## **4.3 Assessment and Findings**

The analysis of case studies examines if knowledge is indeed created through SCRM approach and if it fits the SECI process for knowledge creation. The concepts and linkages mentioned above in the literature review have been kept in mind and used while evaluating all case studies. The evaluations are explained in Table 1. The interviews were conducted keeping SECI process in mind and accordingly the findings from the analysis were fitted into respective knowledge creating dimensions across Socialization, Externalization, Combination and Internalization.

## Positive Disruptions Caused by SCRM Activities in the SECI process of Knowledge Creation

	Mobile & Telecom FIRM A	Cellular FIRM B	Brewery FIRM C	Home & Kitchenware Storage FIRM D
Department	Social Media & digital marketing team.	Branding.	Social Media.	SPOC's from all departments, marketing, campaign, dedicated online team.
Online Ba: Social Platforms used	Facebook, online chat, E-commerce Plugin.	Service delivery online tool, Facebook, personalized blog.	Facebook, Twitter, YouTube, Instagram, Flickr.	Dedicated webpages, microsities, Mouthshut.com, Facebook, Pin-interest, blogs.
Socialization (Tacit-to-Tacit)	Use of Personalized online chat with customers and suppliers (providing trending knowledge).	Extensive approach of One to one interaction with customers regarding brand- philosophy, engagement, ideology discussions, ideation for social problem.	Very little or no one to one or focus group online interaction.	Priority to personal complaints generated online, extensive online dialog for getting specific reasons. Understanding cues from certain online interaction about developing products.
Externalization (Tacit-to-Explicit)	Online Sharing of service problems and picking up discussion about their brand image for brand development. Online design competition with design agencies, customers and experienced designers for developing new designs for their products (dongles, phones, etc.).	Sharing network problems and delivery problems through online collaboration. Extensive use of Social Media listening tools to capture keywords, emotions, etc.	Nothing is tacit as the product is a 'Happy product' and mostly generates positive reviews on their website, on Facebook and on Twitter that is open to all.	Use of Social Analytics to analyze traffic and navigation path, number of hits and likes on Facebook and their website, social demographics, etc. 24/7 monitoring of online community and webpages. Frequent innovative Online water games provoking 360 degrees dialog with their customers.
Combination (Explicit-to-Explicit)	Digital marketing team connect with other departments and third party design agencies through their in house online platforms and also have personalized meetings with the customer insight teams which is also connected online. Limited or no use of Social Media at this stage.	SPOC's from every department with the relevant skills and knowledge are connected online.	Updating the sense of emotions & positive feedback on their webpages and also connect through online communities. Having Online games (such as Beer Commandments Contest) to get a better sense of their product popularity and which also helps them create new merchandise. Core departments (Marketing, Branding, Communication, Sales, Campaign, etc.) constantly connected online.	High degree of combining knowledge from both CRM database and Social Media. Extensive use of SEO, SEM, Mouthshut.com relevant to Subject Matter Expert, SPOC's, NPD teams, sales teams, amongst others.
Internalization (Explicit-to-Tacit)	Nothing is developed with the online customers.	Co-Creating all Brands with online customers	No co-creations with customers for Beer flavors or bottle style etc.	Extensive online debating on feedbacks and reactions related to new products. Regular implementation of colors trends, seasonal trends, that is acquired through their customers and continues revisiting of all the online communities. As such it is not a formalized process but the online customer knowledge is used during all NPD phases.
Change in Pattern at different stages of SECI process	In Externalization stage. When compared to Tacit to Explicit (T→E), the change is T→E→E→T→E.	In Combination stage. When compared to Explicit to Explicit (E→E), the change is E→T→E	In Combination stage. When compared to Explicit to Explicit (E→E), the change is E→T→E	In Combination stage. When compared to Explicit to Explicit (E→E), the change is E→T→E In Internalization. When compared to Explicit to Tacit (E→T), the change is E→T→T
SCRM Integration level	Low integration	Medium integration	Very Low integration	High integration
Knowledge Created	New Designs, best practices (about common and complex network and service issues)	Brand knowledge, emotions, knowledge through positive and negative feedback	Understanding the day-to-day popularity and the sales growth.	Product knowledge, current trends, ergonomic knowledge, sales knowledge, etc.

SPOC-Single Point of Contact    T-Tacit    E-Explicit

Table 1. Four Case studies showcasing the influence of SCRM approach on the SECI process for knowledge creation

**4.3.1 Influence of SCRM approach**

There is an evident use of the SCRM approach in all the four cases. Various departments engage with their customers or target groups through social web to extract as much knowledge as possible. Firms on the other hand provide their customer with knowledge about their brand ideology and philosophy, about problems and issues through online contest and competitions. Customers and their knowledge via SCRM activities are taken seriously, as shown in all modes of knowledge creation. Table 1 summarizes the knowledge conversion at different stages of the SECI process for the companies considered in this study. The important section to be considered is the ‘change in pattern’. Observing at the Externalization, Combination and Internalization mode, SCRM activities tend to change the regular pattern of knowledge conversion and knowledge creation.

Socialization (two or more users interacting online to share tacit knowledge) is quite straight forward and prominent in Firm ‘A’, ‘B’ and ‘D’, where they use one-to-one personalized online interaction through their online chat systems (OCS, Facebook, etc.). While the main interaction between customers and Firms ‘A’ & ‘B’ relate to service and network issues, for Firm ‘D’, it relates to personalized chat for complaints and trend updates. Both kinds of feedback help the firms to realize the contemporary undercurrents about their brand and products in the market. The ultimate goal is to share tacit knowledge and receive as much as tacit knowledge as possible.

SCRM activities alter Externalization too. It is observed that while Firm B uses Social Media listening tools regularly to pick up keywords on emotions, beliefs, thoughts and single word feedbacks, Firm ‘D’ relies on Social Analytical tools to analyze user navigation path, time spent, buying pattern, social demographics, amongst others Table 2.

	FIRM A	FRIM B	FIRM C	FIRM D
<b>Socialization</b>	T→T	T→T	T→T	T→T
<b>Externalization</b>	T→E→E→T→E	T→E	T→E	T→E
<b>Combination</b>	E→E	E→T→E	E→T→E	E→T→E
<b>Internalization</b>	E→T	E→T	E→T	E→T→T

T-Tacit E-Explicit

Table 2.

For instance, Firm ‘A’ tried to create dongle designs from tacit knowledge acquired from online space (by making it explicit within the company). Having hit a roadblock, the design team decided to include another layer of SCRM activity and introduced an online design competition (explicit). Online customers including design experts and design agencies were allowed to participate. The successful contest helped Firm ‘A’ collect huge amount of quality designs and gave them a freedom to choose the best designs (tacit). These designs were once again made explicit throughout various departments for further development (T→E→E→T→E). There were more tacit and explicit conversions in order to strengthen the externalization process conclusively leading to explicit knowledge creation.

Combination plays an important role in enhancing organizational knowledge. Although Firm 'B' 'C' & 'D' have historical knowledge (explicit) in place, the SPOC's (single point of contact), marketing, sales, communication, NPD teams, etc. play a crucial role in constantly being connected to Social Web extracting specific live feed (tacit) and constantly sharing it within the organization ( $E \rightarrow T \rightarrow E$ ). It is observed that firms are constantly looking for tacit knowledge from the online world and evaluating their previously acquired knowledge (explicit) and making sure that it has been shared throughout the organization.

In Firm 'B' & 'D', Internalization mode achieves a logical end. In Firm B, all the SPOCs are connected to each other and also with the customers to co-create a brand strategy that stands out when compared to other competitors. In Firm 'D', the product development team takes online reaction (tacit), color trends (tacit), etc. into account and revisits all online communities before producing the product (tacit) ( $E \rightarrow T \rightarrow T$ ). It is evident from the cases that SCRM activities are monitored by a Social Media agency (controlled by Marketing department) or the Marketing and Branding department itself staging that SCRM has quickly matured and integrated well across firms at varying degrees.

#### **4.3.2 Elements that constitutes BA' as a shared context**

In all the four cases, it has been observed that the online space provided by firms significantly constitutes a shared context and satisfies BA'. At first, considering the originating BA, (Firm 'A') there is an online chat option for network and service issues (context created by the company) and therefore customers have a personalized online communication sharing their experience about network speed and service issues. Firm 'B' has created a personalized blog and a Facebook page (Brand context) to push its brand and has a personalized interaction about brand ideology and at the same time understanding the market perception about their products. For Firm 'A' a specific design competition is conducted on the online platform, which represents the interacting BA' and for Firm 'D' their Social Analytical tool is coded specifically to track the online action of users (navigation path, time spent online, etc.). In Cyber BA', the SPOCs from Firm 'B' and Firm 'D' have a flexible online space (changing their context as per the need of the hour). Firm 'B' and Firm 'D' best fit the Exercising BA' as they create an online space sharing existing knowledge about a specific brand and product respectively. Online users aware and interested (in the brand or product prototypes) participate and share more knowledge via feedback and reviews. This feedback and review collected is used to build new unique products (Firm 'D') and redefine a brand (Firm 'B').

#### **4.3.3 Integration level of SCRM approach**

The integration of SCRM activities differs in four case studies. While Firm 'A' proactively connects with its customers through its Social Media unit for feedback and product design, Firm 'B' employs SCRM activities largely for branding its ideology and creating brand awareness. Firm C uses SCRM to increase its products' (Happy Brands) sales by attracting customers through Online Brand Games and convincing them to buy more Beers, but does not use online customer knowledge in developing flavors or designing bottle size and colors. That is unlike Firm D, which integrates online customer knowledge in all phases of product development.

#### **4.3.4 Knowledge Created through the SCRM approach**

This research shows that knowledge is created extensively in all the four cases. In Firm-A, new designs, trending knowledge to specific network and service issues are created. Online customer perceptions for Firm B's brands are significantly given importance and knowledge is created through personalized online chat on network and service issues. Also SPOCs from every department are looking out to extract as much knowledge as possible. In Firm C, there is huge knowledge creation as the beer products produce positive emotions and indulge their target customers in Beer games. Firm D, is the highlight among all four as knowledge creation is the motto and there is high dependency on customer knowledge from multiple sources.

## **5 Conclusions & Discussion**

In this research paper the varying knowledge creation capacities of SCRM approach have been investigated with Nonaka's SECI process as reference. This research analyzed and showcased the importance of SCRM approach as an excellent source for knowledge creation through case studies. It also linked the concepts and key literature of SCRM with Nonaka's pioneering model of knowledge creation.

This research has described the regular pattern and process of SECI model. It explains how firms (mentioned as case studies) in the quest of acquiring additional tacit knowledge for extensive knowledge creation, integrate SCRM activities leading to a change in the regular pattern of SECI process. This paper terms these changes as 'Positive Disruptions'

All four case studies were different in nature and had varied reasons to expand SCRM approach. While some were risk averse, others invested and relied on SCRM approach and led by example. This paper established a two-pronged impact of SCRM approach – at an industry level and in the academic world. The research identified SCRM approach as an important business activity or process that can certainly benefit the firm beyond limits. It was observed that departments (within firms) that stayed closely connected with social media units had better and consistent access to their consumers and that online consumer connect differed in all four case studies with a corresponding varying degree of SCRM integration.

The earlier mentioned 'Positive Disruptions' were triggered by SCRM activities and the platforms on which they were carried out. It can thus be said that all social media platforms and elements that constitute the Social Web have been identified as a shared context representing BA'.

This research forms a base for further analysis of SCRM approach. New research hypotheses can be developed in SCRM and tested within organizations from different sectors. It will be interesting to document new dimensions of SCRM in the field of organizational knowledge creation. Research can possibly integrate evolving SCRM approach with the core pillars of CRM Strategy – namely, marketing, sales, new product development (NPD) and new service development (NSD). Findings of this paper can be used for future research to build a strong academic literature around SCRM.

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## Appendix 1

List of Questions	
1.	How do you use social media to interact with your customers? And how has your social interaction evolved over the years?
2.	What are the online methods and tools that you use?
3.	What are the types (formal or informal)/platforms of interaction you have with your customers?
4.	Could you please walk me through process of customer interaction or collaboration?
5.	What are the others departments, business units and people connected with the social media platform within your organization and how does the customer knowledge get distributed to them?
6.	How do you process the knowledge or data that you get via social media (data categorization)?
7.	What has been the traditional way of collecting customer knowledge and what is the reason for this shift towards social media platforms?
8.	How strong is the online space that you have created?
9.	You might be having your own New Product Development (NPD) process and phases. Does the knowledge get disintegrated across these different NPD Phases? How?
10.	Do you combine Historical data with the new knowledge created through Social Media (Historical data=Transactional data or the data collected through traditional way and accumulated in the companies database)?
11.	What was the product failure rate initially with respect to Historical data when compared to knowledge created through social media?
12.	Define or explain your structure for Social Media/SCRM approach
13.	Can you give me an example of a case study? (Success or Failure)



### **ARTICLE III**

Durgam, P. "Online Spaces satisfying BA' as a Shared Context: Insights from Ten Case Studies". Published in 37th IRIS Conference, 2014



# Online Spaces satisfying BA' as a Shared Context

*Insights from Ten Case Studies*

## IRIS 37

Pradeep Durgam

Aalto School of Business, Finland

[pradeep.durgam@aalto.fi](mailto:pradeep.durgam@aalto.fi)

### **Abstract**

Web 2.0 is giving rise to many firm-specific collaborative platforms (online spaces) that are connecting the firms and their business processes with their customers. These collaborative platforms under the Social Customer Relationship Management (SCRM) approach have evolved in a short span of time from having general conversations to context specific interactions. The synergy and the exchange of knowledge within the online-shared space are triggered by a specific shared context. The conversations that take place within the online space are either related to specific services or related to specific products. The context of the conversation actually defines the context for the online space created and at the same time the online space gives a platform for those conversation to take place. Several conversations with different context initiated through collaboration keep re-emerging on the online platforms. These online conversations happen to be a source for knowledge creation. To understand the context specific collaborating (online) platforms, this research paper examines the source where the knowledge is created by (1) revisiting the concept of 'BA defined by Nonaka (2) discovering the online platforms under SCRM approach that satisfy 'BA' as a shared context (3) exploring the regular occurrences of an online BA' in the quest for tacit knowledge (4) analyzing 10 case studies from consumer products and insurance products sector (5) Categorizing and designating different BA' that emerge from the online conversation from the case studies.

### **Keywords**

BA', Online collaborative spaces, Knowledge creation, Social Customer Relationship Management (SCRM)

## **1 Introduction**

Web 2.0 that have made online (collaborative) spaces dynamic and interactive are being embraced and implemented by many organizations that want to connect with their customers in order to benefit their business (Pralhad & Ramaswamy, 2004). In this research, online spaces are described as collaborative platforms developed on the

World Wide Web by various firms, to create and produce specific knowledge. But these online spaces that provides a platform, come to life only if two or more individuals from both sides-the organization side and from the larger ecosystems-actively participate and for that a context has to be created. These online spaces where the collaboration takes place defines a context-known an online context, that goes beyond the physical space and time (Hutter, Hautz, Dennhardt, & Füller, 2013) (Pavicic, Alfirevic, & Znidar, 2007). This online context is mostly defined by the organization to understand the customer needs, to realize a firms market standing, to evaluate a certain brand of products, etc. and every now and then the customers in the form of feedbacks and reviews defines the contexts (Alt & Reinhold, 2012). Many online context created is designated by a theme, which gives a meaning (or a short explanation about the online context) to the context and in turn supports to streamline the collaboration and interaction. This leads to a focused knowledge creation. Through these themes the online space can be identified for a certain product/service design & development, innovation, opinions, prototype experimentation, branding, etc. (Pavicic et al., 2007) (Hudson & Hudson, 2013)(Fischer & Reuber, 2011). This notion of online context and its respective theme defines the limitations and boundaries for interaction between individuals but are still open. For example, (Nambisan, 2009) divided the collaboration platforms namely into exploration, experimentation and execution platforms which is defined by an objective, the role of the firm and the desired outcome. Therefore, the online space and the theme go hand-in-hand to create specific knowledge and will seldom be productive or efficient if separated. These online spaces provide individuals or group of individuals to collate their ideas and knowledge around certain products and services (Nambisan, 2002). The online spaces such as social media technologies, blogs, online communities, emails, firms interactive web pages, etc. are the fundamental elements that enable SCRM and also an exceptional source for knowledge creation that leads to an increase in specific organizational knowledge. Having said that, the inclusion of the Web 2.0 into a firm's CRM strategy is attempting to satisfy the notion of SCRM approach (Alt & Reinhold, 2012). In addition, these firm specific online spaces create specific knowledge through a continuous exchange of tacit and explicit knowledge between the firm and their customers (existing or target customers) complementing the concept of BA' defined by Nonaka (Nonaka & Konno, 1998). Now, BA' can be understood as a shared space for emerging relationships and an excellent foundation for knowledge creation. Also, BA' offers a platform for two or more individuals to harness and expel collective knowledge (Nonaka & Konno, 1998). Hence BA' is defined in such a way that it is transcendental (transcending time and space) in nature where knowledge is created from rationality, creativity and intuition (Nonaka, Toyama, & Konno, 2000). There are four types of BA' enabling the SECI process (Socialization, Externalization, Combination & Internalization) namely the *Originating BA'* (facilitating the Socialization process), *Interacting or Dialoging BA'* (facilitating the Externalization process), *Cyber or Systemizing BA'* (facilitating the Combination process), *Exercising BA'* (facilitating the Internalization process)(Nonaka, Reinmoeller, & Senoo, 1998) . Having said that, the fundamental online elements that outline the SCRM approach create a shared context complement the concept of BA', where an online setting is established for sharing, conversion and creation of

knowledge. Consequently, implementation of these online settings have nullified the necessity of a physical space where two or more individuals have to be available personally to create knowledge, making the exchange of tacit and explicit knowledge online or virtual. Furthermore, the Web 2.0 that supports SCRM activities creates several Originating BA's setting (facilitating Socialization) at regular intervals along with the other BA's assigned to its respective modes for knowledge conversion and creation (i.e. Externalization, Combination and Internalization). This Originating BA' setting can be termed as an 'Online BA'. These regular initialization of Online BA' in the quest for acquiring tacit knowledge have amplified the ability to create additional organizational knowledge with superior relevancy. To extend it further, these initializations are explained in this research and validated with evidence found in case studies.

The research paper is organized as follows. The first section describes the constituents involved in knowledge creation concentrating specifically on the SCRM. The second section theorizes a) the representation of online spaces with the four BA's corresponding to the SECI process and b) explains the regular occurrence of Online BA'. The third section provides ten case studies as evidence with the functions of various online spaces that represents BA' created for supporting SCRM activities. Here the case studies showcases the online spaces as online BA's making it an excellent source for knowledge creation and followed by the analysis of regular initialization of Online BA' within SECI's process. The paper concludes with a summary and discussion, revisiting the main points covered and throwing light on future research.

## **2 Knowledge creation in the Online world**

### **2.1 The Revolutionary model of knowledge creation**

#### **2.1.1 Revisiting Nonaka's SECI process**

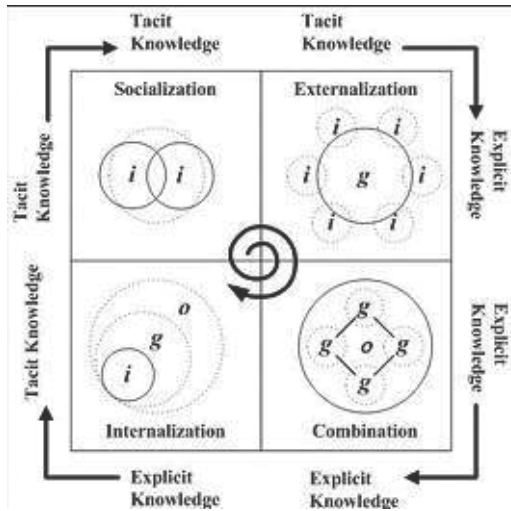
In this socially dynamic society organizations are dealing with a continuously fluctuating environment in order to process knowledge and at the same time create knowledge. Organizations create knowledge through a discourse that occurs between tacit and explicit knowledge. Ultimately, through this procedure of knowledge conversion, knowledge is expanded (in quality and quantity) and created (Polanyi, 1966)(Nonaka, 1994b). To understand it further, this research goes back to comprehend the four processes of knowledge conversion and knowledge creation i.e. the SECI model of knowledge creation. In the socialization process tacit knowledge is shared between two individuals or a group of individuals. Externalization process happens when vocalization of tacit knowledge into explicit knowledge commences making it the first step towards knowledge crystallization (Nonaka, Krogh, & Voelpel, 2006). When the combination process begins, explicit knowledge is converted into further complex sets explicit of knowledge. Finally, in the internalization process the newly created explicit knowledge from all the above process is then converted into tacit knowledge (Nonaka & Toyama, 2003) (Nonaka,



1994a) (Nonaka et al., 1998). This SECI process emphasizes on the vibrant processes of self-transcendence, where resources from organizations transcend their boundaries by engaging in a collaborative processes with their important stakeholders (customers) (Nonaka et al., 1998). In this modern-day world, online interactive spaces postulate a source for creation of new knowledge. And hence, these online spaces surviving on technological advancements shape a novel dimension for organizational knowledge creation. To begin with, the process of knowledge creation starts when the four modes of knowledge creation are operationally controlled in order to form a recurring cycle. The basic understanding is that individuals from both ends have to be present to create knowledge. Also, organization specify a shared context where it incites and cultivates creative beings to collaborate and share knowledge (Nonaka, 1994a).

### 2.1.2 BA as a shared context: shared space for knowledge creation

Ba, is a Japanese term which can be interpreted as a supportive space (physical or virtual) and that is designed by a specific context for knowledge creation (Nonaka et al., 2000). It can also be acknowledged as a shared space that activates a knowledge creating process for gathering collective intelligence. Furthermore, data, information and knowledge are all engrained in the thoughts of individuals that are a part of these spaces. In these shared spaces, knowledge is acquired through one's own ability to understand the know-how of others. BA' can emerge from communities or groups or from a dialog between any two individuals. Thus, BA' is defined as a shared context that postulates the essential sustenance for SECI process. There are 4 types of BA's that incorporate itself with SECI Process and delivers a platform for a self-motivated knowledge creation (Nonaka & Konno, 1998): The Originating BA', a shared space which is associated with the Socialization phase, facilitates individuals or groups to communicate their feelings, their experiences & emotions, and conceptual models and also is the start of knowledge creating process. The Dialoging BA' a space which is interrelated with Externalization phase and to create a dialoging BA', there is a need for selecting individuals with the right combination of focused knowledge and competences, crucial to stimulate knowledge conversion and eventually knowledge creation. The Cyber BA' a space linked with Combination phase where explicit knowledge is merged with the prevailing knowledge further producing new explicit knowledge, which is then distributed within the firm. The Exercising BA' a space associated with Internalization phase allows the conversion of gathered explicit knowledge from the pervious processes into tacit knowledge (Nonaka & Konno, 1998).



**Figure 1:** Spiral Evolution of Knowledge Conversion & Self-transcending process

- i-individual
- g-group
- o-organization

(Nonaka & Konno, 1998)

### 2.1.3 online spaces for collaboration and knowledge creation

Firms are integrating the Web 2.0 applications in their CRM strategy, in order to establish innovative procedures of sharing & creating knowledge (Kaplan & Haenlein, 2010). To name a few, collaborative knowledge transfer, focused product & service related discussions, reviews and feedbacks are the result of online customer collaboration, leading to knowledge creation (Bolton et al., 2013). Additionally, ventures in Enterprise 2.0 are presenting online spaces for the Social Web to be booming. To take it further, the access to these online spaces has resulted in positive exploitation of customer knowledge resulting in profitable business (reducing costs, redefining non-profitable products/services, etc. (Razmerita, Kirchner, & Sudzina, 2009). Also, these online spaces are tremendously supporting and streamlining core business functions (campaign management, customer retention, segmentation, etc. (Baird & Parasnis, 2011). Yet, the presence of collaborative online space will rely on its faculty to tackle the tests of constantly creating knowledge (Greenberg, 2010). The creation of knowledge materializes when there is constructive collaboration of know-hows between distributed teams within an organization and communities outside the organizational boundaries (Razmerita et al., 2009). And here the online spaces under the umbrella of Web 2.0 are an exceptional stage to link the two. Also it has to be noted that these online spaces are just a channel and not a replacement for principal application such as sales, marketing, finance, operations, etc. (Askool & Nakata, 2010). Hence, these online spaces just facilitate the core functions of Marketing, Sales, New Product Development, amongst others.

#### 2.1.4 Organizational knowledge creation through SCRM

The firms' online spaces are developed on the Web 2.0 principles facilitating the SCRM approach. Also, to create more knowledge (formal and informal) firms are linking these online spaces to various strategic CRM functions making it more as socially assisted business practices (Lehmkuhl & Jung, 2013). SCRM can be defined as the integration of Web 2.0 applications into the firms already existing CRM strategy. SCRM is just an extension and not a replacement to CRM (Greenberg, n.d.) (Levy, 2009). Having said that, the inclusion of SCRM activities tend erase the knowledge management boundaries and the limitations of knowledge creation that occur within an organization (Dous, Salomann, Kolbe, & Brenner, 2005) (Roblek, Bach, Meško, & Bertoncelej, 2013). Also, online spaces proves even more beneficial when knowledge is instinctively created by its regular usage (Jr, 2007). Hence, proper organizing of SCRM approach in coordination with strategic CRM procedures builds a basis for collecting direct understanding into the users (customers) beliefs and objectives. Before the introduction of the Social web, CRM strategy for an organization contained complex pre-defined technological procedures to productively facilitate customer relationships and extracting maximum value (including knowledge) from their customers over a particular period of time (Akroush, Dahiyat, Gharaibeh, & Abu-Lail, 2011). From the historical literature it has been realized that organizations CRM strategies primarily concentrated on the operational responses essential for the management of their customers (Shaw, Subramaniam, Tan, & Welge, 2001) (Liao, Chen, & Deng, 2010) (Frow, Payne, Wilkinson, & Young, 2011). But with the deployment of the SCRM approach, there has been a substantial two-way integration where organizations are offering their customers an online space to participate, communicate, share and exchange experiences allowing them enough freedom to make logical judgments on how to collaborate and produce knowledge for the organization.

### **3 The online spaces representing BA' as a shared context**

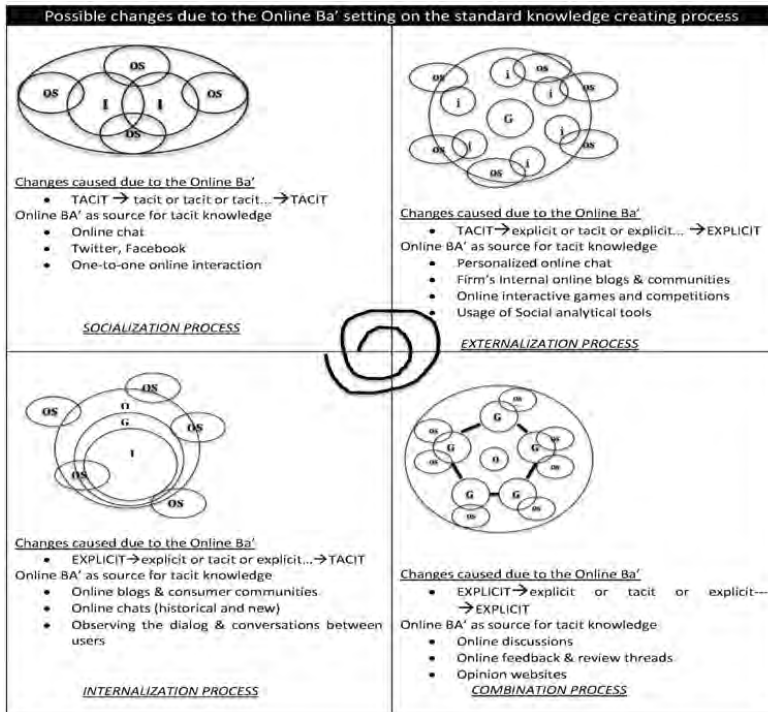
Originating BA' is the space where two or more individuals share experiences feelings, and intellectual models and emotions (tacit knowledge) (Nonaka et al., 2000). Also, an individual empathizes with other fellow member(s), eliminating the boundaries between the self and others (Nonaka, 2007). Originating BA' is a definite productive environment where the knowledge creation process starts representing the socialization phase (tacit-tacit) (Nonaka et al., 2006). This environment has largely been described in the context of physical space but having said that tacit knowledge can even be acquired from a 'online' space, which is beyond the firm's borders (M. Vuori, 2012). Organizations use these online spaces to regularly acquire and generate benefit from tacit knowledge embedded in the customers and this is done by collaborating with them through personalized online chat application, collaborative social communities, virtual ideation labs (Sawhney, Verona, & Prandelli, 2005). Innovative and firsthand tacit knowledge is generated from the online spaces through dialogues, debates and negotiations where different participants share their know-

hows and experiences that are available for new understandings and interpretations (Shang, Li, Wu, & Hou, 2011). A meaningful way to cultivate customer knowledge creation within firms is to familiarize ways for organizational members to interact on both within the firm as well as interact with external stakeholders (customers) through the online spaces. These interactive online spaces created by organizations enables content creation and community building and development of its network with its customer base (Mahr & Lievens, 2012). The core online platforms under the SCRM approach, is a significant element of the customer knowledge management systems with emphasis on customer knowledge creation. The firms online platforms are mainly for feedbacks, product/service discussions, branding, marketing, etc. and are mostly interactive as it seamlessly links various individuals from both within the firm as well as outside (Reinhold & Alt, 2011) (Zyl, 2009) (Mahr & Lievens, 2012) (Bolton et al., 2013). Therefore online spaces can be used for collaborating and knowledge creation emphasizing that it can represent the Originating BA'. The Interacting BA' is more intentionally constructed by firms, by choosing people with the right combination of specific knowledge and know-hows. Through discourse, member's intellectual models and skills are transformed into basic terms and concepts (Martin-Niemi & Greatbanks, 2010). Interacting BA' is the space where the tacit knowledge is converted and made explicit representing the externalization process (Nonaka & Konno, 1998). Therefore, dialogue is vital for such conversions; and the wide-ranging usage of metaphors is the important conversion skills required. Within this space, crystallization of knowledge starts when tacit knowledge is converted to explicit. Company's personalized blogs, interactive web pages, wikis, service webpages, online review & feedback, amongst others symbolizes interacting BA'. These online spaces provide the liberty for expressing freely and a foundation to attain customers' bespoke knowledge dispersed in discussions across the defined online spaces. In the interacting BA', collaboration through online spaces contextualizes the knowledge created. Interactive feedback pages and service oriented webpage provide an excellent source with implementable collective intelligence i.e. tacit knowledge, (Ahlqvist, Bäck, Heinonen, & Halonen, 2010). Cyber BA' provides a place for interaction in the virtual world going beyond the real space and time. Within this space there is a combination of new explicit knowledge with existing knowledge that systematizes explicit knowledge throughout the firm (Nonaka & Konno, 1998). The combination of explicit knowledge is competently handled in collaborative environments by employing information technology and by utilizing social media networks, CRM databases, web portals, documentation, intranets, groupware (Nonaka et al., 2000) (Nonaka, 1994a). Therefore, the knowledge from online spaces can be combined with the already existing organizational database to create new knowledge (Alt & Reinhold, 2012). Online spaces such as collaborative platforms, blogs and wikis give possibilities for organizations to improve their in-house operations and collaborate with their business associates (Prahalad & Ramaswamy, 2004). Hence, online spaces can be used for refining existing best practices, inventing new business models and create new sources of knowledge (Kietzmann, Hermkens, McCarthy, & Silvestre, 2011). Higher the inflow of knowledge from these online spaces better are the business systems because knowledge conversion incorporates the use of Web 2.0 procedures in order to

combine explicit knowledge within users. For example, social bookmarking, RSS feeds, Mash-ups, amongst others are a social tool to extract content from different online spaces and producing it in an entirely new form (Mohan, Choi, & Min, 2008) (V. Vuori & Okkonen, 2012). Exercising BA' provides a space that enables the conversion of explicit knowledge to tacit knowledge. The Social web offers organizations to create numerous online spaces where they become more imaginative and inventive. Organizations are more or less bound to collaborate with their customers to acquire their wisdom for new product innovation, service design, etc. (M. Vuori, 2012). That is because online users using the Social Web have become serious contributors in the New Product Development (NPD) phases' and other CRM functions (Sawhney et al., 2005). Forums created on a firms' online space are excellent examples. It provides a space for discussions on new products and services, for new designs, for concept testing, amongst others. Also, in these types of interactive spaces, (open) customer participation instigates other online users (as prospective customers) to further construct the debate with their opinions and belief (Kaplan & Haenlein, 2010). Therefore, the knowledge creation becomes automatic giving online users to showcase their product-related know-hows, issue based solutions, etc.

### **3.5 Regular occurrences of an Online BA' in the quest for tacit knowledge**

Due to the deployment of the SCRM approach various business units are connected online with their customers to understand their needs and optimize their business procedures to become more customer centric. This research paper establishes that the online platforms represent the BA' as a shared context and at the same time highlights the regular occurrences of online BA' for Socialization in the pursuit of acquiring more and more tacit knowledge. In a standard setting, originating BA' provides a space for the conversion of tacit to tacit knowledge, interacting or dialoging BA' provides a space for the conversion of tacit to explicit knowledge, cyber or systemizing BA' provides a space for the conversion of explicit to explicit knowledge and exercising BA' provides a space for the conversion of explicit to tacit knowledge. On one hand, BA' as a shared space, has a typical configuration of knowledge conversion between tacit and explicit and on other the online BA' as a shared space reacts to the constant feed of customer knowledge accessed via social platforms which is mostly tacit in nature. Integration of Online BA' provides a sources for acquiring tacit knowledge positively altering the standard conversion of tacit to tacit, tacit to explicit, explicit to explicit and explicit to tacit. For example if the Online BA' setting is added to the Cyber BA', then the standard conversion (explicit to explicit) is altered to explicit-tacit-explicit-tacit-tacit...-explicit. Similar changes have been noticed in the other standard BA' setting that has been explained in detail in the case studies. These changes caused due to the Online BA' do not alter the regular BA' in anyway (the outcome is the same after conversion), but merely add value to the final consequence by generating more knowledge.



**Figure 2:** Possible changes due to the Online BA' setting

- I=individual
- G=group of individual
- O=organization
- OS=online space

## 4 Case Studies representing online platform as online BA' –a shared context

### 4.1 Designing the cases for analysis

This research includes a qualitative study that plans to contribute to the theory of knowledge creation by presenting the online spaces as Online BA' to assist further specific knowledge creation. This research concentrates on firms that have a functioning SCRM strategy and aspires to investigate how online spaces produce essential customer knowledge for different departments and how the same knowledge transforms into an asset for the entire organization. The study maps the process of online collaboration and understands how the four BA's evolve in the online space. While the interview questions were both in-depth and comprehensive the focus was on the SECI process and the standard BA's that triggered knowledge creation. For the purpose of this paper, ten case studies representing Consumer Products & Insurance Products industry have been chosen. The scope of the case studies ranges from a progressive level of reliance on online spaces for knowledge creation to already well-

developed online platforms.

Bearing in mind the confidentiality norms of firms included in this research paper, their identity have not been revealed. The companies that were involved were from the consumer product industry and the insurance industry. All companies were chosen on the basis that they use some level of Social media and online platform to facilitate their business process including new product development, marketing, sales, etc. The evaluation of the case studies inspects if knowledge is certainly created through online platforms and if it satisfies BA' for knowledge creation. All the above concepts and relationships in the pervious sections have been strongly considered while assessing all case studies. The assessments are explained in Table 1.

Company	Business Unit	Online BA' (OB)	OB Influence on Originating Ba' (for Tacit to Tacit conversion)	OB Influence on Interacting Ba' (for Tacit to Explicit conversion)	OB Influence on Cyber Ba' (For Explicit to Explicit conversion)	OB Influence on Exercising Ba' (for Explicit to Tacit conversion)	Tacit Knowledge created through the Online Ba'
Health Insurance	Marketing	Use of Online platform reputation Management (ORM) for solving customer complaints within 48 hrs. Facebook, Twitter, firm's web page.	Constantly feeding new content on their dedicated online space for their customers. (Tacit)	Redefining customer services and creating new inbound opportunities based on online information. (Tacit)	Have a strong SMS and email footprint within the organization as well as outside and the resulting information is stored online and is open to all. (Tacit)	Selling new concepts and the reinventing the Brand based on their entire online and local database. (Tacit)	Moderate
FMCG (female beauty products)	Social Media	Use of Facebook, Twitter and firm's specific interactive webpages.	Introducing 'Gang of Girls' online games and conducting online competition and group discussions. (Tacit) Performing above the line online marketing and advertising.	The tacit knowledge acquired online for a certain is made explicit within the concerned departments. (Tacit)	Brand & product discussions (existing and new) with their customers and between departments. (Tacit)	Promotion of New products via search engine optimization. (Tacit)	High
Consumer Products	Third party Social Media	Facebook, Twitter and Google Plus.	Regularly updating information about new and existing products. These updates are open leading to two-way conversation. E.g. Twitter chats, Hash tags, Blogs, Partnership with Bloggers (Tacit)	Extensive use of Online comments and feedback for their product strategy. (Tacit)	Connecting emotionally with their customer through photography via Instagram. Evaluating real time experiences about their products. Extensive use of Social tools to track the performance of the online platforms and to extract not so publicly available data. (Tacit)	Online knowledge is used for new ways of selling and brand awareness. (Tacit)	Moderate
Home & Kitchenware Storage	SPOC from all departments, marketing, campaign, dedicated online team.	Dedicated webpages, microsites, Mouthshut.com, Facebook, Pin-interest, blogs, etc. (Tacit)	Use of Online chat for personal complaints, discussions for getting specific reason. Understanding cues from certain interaction about developing products. (Tacit)	Use of Social Analytics to analyze traffic, navigation path, number of hits and likes on Facebook and their website, social demographics, etc. Also analyzing the time spent by customers on their community and webpages. Frequent introduction of online water games provoking 360 degrees dialog. (Tacit)	High degree of combining knowledge from CRM database and from the Social Media. Extensive use of SEO, SEM, Mouthshut.com relevant to Subject Matter Experts, SPOC, NPD teams, sales teams, amongst others. (Tacit)	Extensive online debating on feedback and reaction related to new products. Regular Implementation of colors trends, seasonal trends, acquire through their customers continues revisiting of all the online communities. As such it is not a formalized process but online customer knowledge is used during all NPD phases. (Tacit)	Very High
Life Insurance	Marketing	Twitter, YouTube channel & Facebook fan page	Regular Photo contest on their web pages related to 'celebrating life'.	Constant use of online platform to know product popularity	Use of Social Media listening tools to verify product performance	Life Insurance products are generally producing internally therefore not	Low



			Not much serious two-way interaction other than customer service related issues. Constantly spreading Awareness of their products through online platforms. (Tacit)	Department do not use online platform extensively once the specific knowledge has reached within the relevant department. (Tacit)		much use of Internet for customer collaboration. (Tacit)	
<b>Brewery</b>	Social Media	Facebook, Twitter, YouTube, Instagram, Flickr	Very little or no one to one or focus group online interaction	Nothing is tacit as the product is a 'Happy product' and usually generates positive reviews on their online space open to all	Updating the sense of emotions & positive feedback and connect through online communities. Having online games (such as the Beer Commandments Contest) to get a better sense of their product popularity and to create new merchandise. (Tacit) Core departments (Marketing, Branding, Communication, Sales, Campaign, etc.) are constantly connected online	No co-creations with customers for Beer flavors, or style of Bottle etc.	<b>Very Low</b>
<b>Cellular &amp; Telecom</b>	Branding	Service delivery online tool, Facebook, personalized blog.	Extensive approach of One to one interaction with customers regarding brand-philosophy, engagement, ideology discussions, ideation for social problem. (Tacit)	Sharing network problems and delivery problems through online collaboration. Extensive use of Social Media listening tools to capture keywords, emotions, etc. (Tacit)	SPOC's from every department with the relevant skills and knowledge are connected online. (Tacit)	Co-Creating all Brands with online customers (Tacit)	<b>High</b>
<b>Mobile &amp; Telecom systems</b>	Social Media & digital marketing team	Facebook, online chat, E-commerce Plugin	Use of Personalized online chat with customers and suppliers (providing trending knowledge). (Tacit)	Online Sharing of service problems and picking up discussion about their brand image for brand development. Online design competition with design agencies, customers and experienced designers for developing new designs for their products (dongles, phones, etc.).	Digital marketing team connect with other departments and third party design agencies through their in house online platforms and also have personalized meetings with the customer insight teams which is also connected online. Limited or no use of Social Media at this stage.	Nothing developed with online customers	<b>Moderate</b>

				(Tacit)	Limited or no use of Social Media at this stage.			
<b>Cosmetic Products</b>	Social Unit	Media	Facebook, Twitter, Foursquare, Pinterest, specific pages, YouTube	Firm online blogs, Use of online chat with customers for discussing skin treatment, sharing personal skin related problems. (Tacit)	Extensive access of Facebook & twitter insights for acquiring authentic knowledge. (Tacit)	The customer service is solely handled by modern day online platforms. Online customers constantly recommending each other and giving information of competitors' products on sun protection (SPS) and blocks through online platforms. (Tacit)	Creating new products on sun protection from the online recommendation and online feedback. E.g. SPS 70 was a hit. (Tacit)	<b>High</b>
<b>Mobile Products</b>	Third Party Social Media consultancy	Party Media	Facebook, Twitter	Regular building of online content for consumer loyalty and engagement. (Tacit)	Deriving real time information from online platforms. But is not used extensively within departments. (Tacit)	Use of Social media tools (e.g. explicate and germinate) for extracting quantitative data and tracking Customer navigation. (Tacit)	Low level of online knowledge is used in New Product Development	<b>Low</b>

**Table1:** Case Studies showcasing the creation of tacit knowledge from online spaces

\*SPOC-Single point of contact

#### 4.3.1 Influence of online space

There is an obvious use of the online spaces in all the ten cases. Various business units participate with their customers or target segment via social web to obtain as much relevant knowledge as possible. Organizations through the online medium provide their customer with knowledge about their product, brands, service, philosophy, ideology, etc. Also, we notices that customers and their knowledge produced (feedbacks, opinions, beliefs, etc.) through the online platforms are taken seriously. Table 1 summarizes the influence of Online BA' in tacit knowledge creation and knowledge conversion. The important segment to be considered is the regular occurrences (triggering) of the online space termed as the online BA' that creates tacit knowledge changing the standard functionality of BA's as a shared space.

Company	Business Unit	Online BA' (OB)	Different Online BA' created (Categorization)
Health Insurance	Marketing	Online platform reputation Management (ORM)	Reputation Ba', Service Ba', Branding Ba'
FMCG (female beauty products)	Social Media	Facebook, Twitter and firms specific interactive webpages	Campaign Ba', Online Competition Ba',
Consumer Products	Third party Social Media	Facebook, Twitter and Google Plus	Interaction Ba', Product Ba', Photography Ba'
Home & Kitchenware Storage	SPOC from all departments, marketing, campaign, dedicated online team	Dedicated webpages, microsites, Mouthshut.com, Facebook, Pin-interest, blogs, etc. (Tacit)	Complaint Ba', Tracking Ba', Feedback Ba', innovation Ba'
Life Insurance	Marketing	Twitter, YouTube channel & Facebook fan page	Photography Ba', Online Listening Ba'
Brewery	Social Media	Facebook, Twitter, YouTube, Instagram, Flickr	Online gaming Ba', Competition Ba'
Cellular & Telecom	Branding	Service delivery online tool, Facebook, personalized blog (Tacit)	Branding Ba', Ideology Ba', Co-Creating Ba'
Mobile & Telecom systems	Social Media & digital marketing team	Facebook, online chat, E-commerce Plugin	Network Ba', Design Ba', Service Ba'
Cosmetic Products	Social Media Unit	Facebook, Twitter, Foursquare, Pinterest, Firm specific online pages, blogs, You	Personalized Ba', New product development Ba'
Mobile Product	Third Party Social Media consultancy	Facebook, Twitter	Loyalty Ba', Analysis Ba'

**Table2:** Categorization of different Online BA'.

#### 4.3.2 Online elements that constitutes BA'-The online BA'

In all the 10 cases, it has been witnessed that the online space offered by organization considerably represents an online BA' and satisfies the standard BA' defined by Nonaka. In the above firms there is personalized chat options for services and network related issues (a shared online context created by the firm) and therefore customers have a personal online communication where they share their experience say for example about network rate and service concerns (can be categorized as a Network BA' or a Service BA'), refer Table 2 for the categorization of different Online BA'. Some firms have generated a personalized blog and a Facebook webpage (context created on the basis of a Brand, therefore can be categorized as a Branding BA') in order to sell their brand and create a personal interaction regarding brand ideology (ideology BA'). For a mobile and telecom firm, a design competition is conducted on the online space (can be categorized as a Design BA') representing the interacting BA' and for a home and kitchenware firm their Social Analytical tool is coded specifically to track the online action of users (can be categorized as a Tracking BA'). Many firms mentioned have a flexible online space altering their online context as per the need of the moment, therefore the theme of the Online BA' can change dynamically.

## 5 Conclusions & Discussion

In this research paper the varying knowledge creation capacity through the online space has been analyzed with Nonaka's four BA's as reference. This research has examined and highlighted the significance of online space as an exceptional source for organizational knowledge creation through case studies. It showcases the integration of the online spaces as online BA', which creates more tacit knowledge from various online sources. All social media platforms that constitute the SCRM have been recognized as Online BA' as a shared context signifying BA'.

All ten case studies are varied in size and have diverse mindsets for expanding their online presence. It is observed that with the advent of the Social Web, online platforms have become an integral part of the core business process. And, therefore in the quest of acquiring additional and relevant tacit knowledge the Online BA' keeps emerging at regular intervals for Socialization. It was observed that different business units that were diligently connected with the Social web had a superior and steady access to their consumers (the degree of connect varied in all the ten cases).

This research paper institutes a two-pronged impression of the online space – at a firm level and for the scholastic world. Further research can be done on various firm specific Internet platforms and online space representing them under the Online BA' and at the same time categorizing them appropriately. Outcomes of this study can be utilized for future research to construct a robust academic literature around BA', SCRМ and knowledge creation.

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## **ARTICLE IV**

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# How Companies Can Modify R&D for Integrating Social Media Activities into the New Products Development

Darius Pacauskas

*Aalto School of Business, Finland, darius.pacauskas@aalto.fi*

Pradeep Durgam

*Aalto School of Business, Finland, Pradeep.durgam@aalto.fi*

Vladislav V. Fomin

*Vytautas Magnus University, Lithuania, v.fomin@if.vdu.lt*

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## How Companies Can Modify R&D to Integrate Social Media Activities into the New Product Development Processes

**Darius Pacauskas**

Aalto School of Business, Finland

[Darius.pacauskas@aalto.fi](mailto:Darius.pacauskas@aalto.fi)

**Pradeep Durgam**

Aalto School of Business, Finland

[Pradeep.durgam@aalto.fi](mailto:Pradeep.durgam@aalto.fi)

**Vladislav V. Fomin**

Vytautas Magnus University, Lithuania

[V.fomin@if.vdu.lt](mailto:V.fomin@if.vdu.lt)

### Abstract

*Over the past decade, open innovation achieved enormous amount of attention both, from scholars and practitioners. This research considers one aspect of open innovation i.e. customer innovation through social media, and delves deeper into companies' practices that efficiently integrate information from social media into New Product Development (NPD) processes. This study adopts mechanism of coordination method to explore how moving from traditional product development to open innovation affects changes in R&D. This investigation finds four important factors companies focus on while integrating social media into NPD processes. The factors are, namely, (1) frequent interaction with customers, (2) open information flow, (3) building a unit for coordinating activities, and (4) dividing R&D into units for tackling issues related to ideation, concept development, and actual product building separately.*

**Keywords:** Social media, R&D, New Product Development, co-creation, open innovation

### 1 Introduction

For a long time vertically integrated R&D was the most commonly used model for developing new products. While products and services were developed within the company, customers were treated as passive users. But with the emergence of open innovation (Chesbrough et al., 2006), customers are now being actively included in new product development processes (NPD), and are treated as value co-creators within the company.

In the past decade, open innovation became a hot topic among management scholars. Vrande et al., (2010) presented different areas of open innovation research, which include open innovation in SMEs, open innovation and competition patterns, the role of

individuals in open innovation, the relationship between open innovation and entrepreneurship in determining the innovation performance, and how firms can profit from large scale form of open innovation.

One field of open innovation is customer innovation. Even though co-creation in customer innovation has been known for more than 15 years, companies have adopted it on a larger scale only recently. In the traditional NPD process, the product was created within an organization, but now social media platforms, such as Facebook, Twitter, blogs and virtual forums, have paved ways for companies to reach their customers in the online environment, thereby increasing the pace of product development through continuous customers collaboration.

Customer collaboration with an open innovation approach is considered as an antithesis to the traditional vertically integrated model of R&D where products are developed internally (Schroll and Mild, 2011). Thus, with the increased application of open innovation activities, some scholars have also started questioning the role of internal R&D (Schroll and Mild, 2011).

Even though open innovation and co-creation have attracted a lot of attention from scholars, it's not yet clear how R&D is adjusted to employ open innovation in general and customer innovation in particular. The above uncertainty leads us to the research question of this paper:

*How are companies adjusting their internal NPD activities in order to handle collaboration with their customers through social media?*

*- How is the structure of R&D department affected?*

*- What are the new processes being integrated within NPD processes?*

To tackle these questions we looked into the theory of 'mechanism of coordination' within organizations to explain structural changes in R&D department processes. This research is based on qualitative data collected through interviews with product developers, managers and social media experts from leading companies (consumer products, retail & insurance) in India.

## **2 Literature Review**

The nature of global economic growth has been changing due to the speed of innovation, rapidly evolving technology, shorter product lifecycles and a higher rate of new product development. The complexity of innovation has increased the amount of knowledge readily available to organizations (Plessis, 2007). Despite the role of knowledge as a key component for continuous innovation, the practice of dedicated knowledge management to support innovation has not yet become fully accepted in firms (Chapman and Magnusson, 2006). This is due to the difficulty of integrating knowledge management into the process of innovation (Xu et al., 2010). Open innovation requires even more sophisticated approach to knowledge management, as knowledge can be acquired from different sources including customers, governmental agencies, third parties, and even competitors.

Some studies have already examined the implementation of open innovation within organizations from different perspectives. Herzog & Leker (2010) looked into the organizational culture and documented that there are different innovation cultures required for closed and open innovation. Kuschel (2008) investigated the ecosystem of products within companies and found the significance of information infrastructure in contextualizing the ecosystem and thereby supporting open innovation. Wincent et al., (2009) researched how the network governing boards should be organized in order to improve the innovative position of network participants. Bergman et al., (2009) introduced group decision support systems complementary to the development process, which also acts as supplementary tools for knowledge creation in open innovation.

Despite these past studies, there remains a gap with respect to the implementation of open innovation activities within companies. Chesbrough & Appleyard (2007) argue that the biggest challenge for firms is overcoming the limitations of traditional business strategies. They need to integrate strategic approaches that address both the inside-out and the outside-in processes of open innovation (Giannopoulou et al., 2010). Hence, open innovation requires a different mindset and a wide set of new capabilities within companies (Vrande et al., 2010). More empirical research is needed concerning strategy, organizational culture, organizational structure and human factors that support open innovation (Vrande et al., 2010).

To answer the research question this study focuses on one aspect of open innovation, i.e. customer innovation, taking place within a social media environment. This study also examines the organizational changes occurring within the R&D department after the integration of social media into its innovation processes.

## **2.1 Social media**

A social media environment can be described as a highly interactive platform where individuals & communities share, co-create, discuss, and modify user-generated content (Piller et al., 2012). Social media includes social networks like Facebook and Twitter, blogs, and virtual forums amongst others. Companies active in social media platforms track discussions, comments, feedbacks, beliefs and innovative ideas related to new & existing products & services.

Approaches to harvest product-related knowledge from social media platforms can be much more sophisticated than the simple process of gathering customers' feedback. For example, customers can be given design tools and asked to implement their ideas using those tools. For such collaboration to be successful users have to be motivated, data gathered from the users needs to be managed and social media platforms have to be tracked for customer activity. All of these activities require integration of collaboration practices within R&D processes and methods. So if managers decide to adopt a certain "open" strategy they need to modify the current organizational structures & processes and at the same time develop the relevant capabilities that will help in executing this strategy (Giannopoulou et al., 2010).

## **2.2 Mechanisms of Coordination**

Companies typically have separate functions, teams and individual roles specifically designated for the 'inside-out' process (Mortara & Minshall, 2011) to gather innovative ideas and coordinate the process. Martinez & Jarillo (1989) found the mechanisms of coordination used by multinational organizations varying from the most 'formal and structural' to the most 'informal and subtler' ones.

In order to understand structural changes in an R&D department that uses customer knowledge acquired from social media, this research views the R&D department through the *mechanism of coordination lens*.

A mechanism of coordination can be described as an administrative method used to integrate different units within an organization (Martinez & Jarillo, 1989). There is a pressing need to incorporate Mechanisms of coordination in organizations as they have different administrative & functional units, which require concerted coordination effort in order to be effectively operational (Martinez & Jarillo, 1989).

There are 8 mechanisms of coordination divided into two groups – structural or formal, and informal. They are namely (1) departmentalization, (2) centralization, (3) formalization, (4) planning, and (5) output control belonging to the first group, while (6) cross-departmental relations, (7) informal communication, and (8) socialization belonging to the second group (Martinez & Jarillo, 1989).

### 3 Methodology

This research finds qualitative research appropriate for open innovation and follows past open innovation researchers who have adopted a case study approach (Vrande et al., 2010).

For the purpose of this research, a qualitative exploratory study was conducted. A semi-structured questionnaire was prepared with questions relating to social media usage and changes in product development in the chosen companies in India. Major companies in different consumer products and insurance segments – market leaders in India using social media actively for product development - were contacted in search of suitable interviewees. In order to draw more insights people in different roles (with varied responsibilities) were shortlisted. The profiles ranged from social media experts (who tracked important ongoing trends), to product development experts (who documented product development specific activities), and even included other experts involved in social media activities in marketing, sales & services (who followed service development related activities in social media platforms). All the interviewees were either employees of the firms or were working as third parties for the firms..

Overall ten people were interviewed. Six of them were from five different social media consultancies working for various organizations – while two were associated with different insurance companies, two were third party product design specialists, one was a freelancer for different kitchenware projects, and another worked for a home appliance firm. Refer table 1.

Position	Organization	Type of business
Senior social media consultant	“Social world”*	Social media consultancy
Social media consultant	“Social world”*	Social media consultancy
Social Media manager	“Media for all”*	Social media consultancy
Social Media technical and functional consultant	“Breakthrough”*	Social media consultancy, and tool development
Social media expert	“Other side”*	Social media consultancy
Social Media Expert	“We know the answers”*	Social media consultancy
Product designer	Freelancer	Kitchenware products
Product designer	“Groundbreaking house”*	Home appliances
Regional area manager	“Safe”*	Non-life Insurance
Insurance product manager	“Security for you”*	Health and Life insurance

**Table 1:** Interviewees

\*Organization names are changed

The interviewees explained their viewpoints with the help of several examples. For instance, the social media experts made key observations about companies that have been successful in using social media in NDP process. Both the product design specialists and the insurance product manager talked about how they integrated social media processes within their respective organizations. A regional area manager with an insurance company stated that they had plans to implement activities with customers through social media in the next quarter. They hoped to start implementing changes to efficiently handle the process of co-creation. None of the participants were willing to reveal the identity of their firms and hence to maintain confidentiality, this research has changed the names of all companies. But the authors are aware of the company details.

Interviews were on an average around half an hour in length. All interviews were recorded, transcribed, and coded. Interviews were analyzed bearing in mind the

mechanisms of coordination, which were taken into account to understand the changes in R&D structure & processes related to NPD. Data Analysis was conducted in two main steps. First, coding was performed to identify coordination mechanisms for the companies that adopted social media. Based on data analysis, three co-ordination mechanisms were found – (1) departmentalization, (2) centralization, and (3) cross-departmental relations (see table 2 for examples). The next step involved analyzing interviews based on the derived mechanisms. While data categorized under *departmentalization* category was analyzed based on structural changes, data attributed to *centralization* mechanism was analyzed taking into account the department’s layout involved in social media activities, and data labeled as *cross-department relations* was evaluated on the basis of the information flow within departments.

Type	<i>Departmentalization</i>	<i>Centralization</i>	<i>Cross-department relations</i>
Quotes	“it fits under NPD as part of at very beginning stage for collecting insights.”	“it is controlled by one team, like a corporate marketing or corporate communication”	“There has to be free flow of information between each department”

**Table 2:** Initial coding categories and examples

## 4 Results

In this section, this research examines the role of social media in the company’s NPD in general and re-structuring of R&D. The study starts by explaining why social media is an important part in product development. It also examines how social media is being used in the context of NPD, the changes it brings about in R&D practices and organizational structures, and finally dissects the reasons that prevent firms from integrating social media into their NPD and R&D processes.

### 4.1 Reasons for social media starting to play an important role

This research has observed the increasing popularity of customer collaboration through social media. There has always been a huge scope for social media integration. As traditional market research methods were not able to capture target market insights, customers’ presence online forced companies to deploy communication tools for continuous online collaboration.

*“10 years ago I hardly used to share 10 things in a week, as the only thing I could do was to go to a telephone booth and call someone, but now as I have a device and plenty of different applications that facilitate communication, I am able to share maybe 22 updates per day. Traditional marketing research was done using a very small data sample. How can 1.1 billion people be represented by lets say 7000 people? Now Facebook can give me a data sample of 91 million people in India. You can listen to that in real time and you can get 20000 feedbacks everyday”* – mentioned by a “Breakthrough” consultant responsible for social media activities

The idea for new products needs to come first. In many cases the idea, whether it is radical or incremental innovation, is derived from the unsatisfied market in the form of complaints, suggestions or new concepts.

*“The need for the new product comes from some kind of market feedback. It’s not that we sit in office and think up something.”* – “Safe” manager (Regional Area Manager actively involved in Social Media)

Online communities created by social media users providing feedback and suggestions motivate companies’ to participate in social media activities. Communication with the customers on social media platforms doesn’t end after the first stage i.e. getting the idea.



Companies interact whenever they have the possibility to interact with their customers for feedback.

*“You take different sketches and you upload to different design websites. There are user design specific websites like ”behanca”, and a design forum called “design in India” specific to India. “Design community in India” is a very closely related community; you can get insights and can get feedbacks form that site and is the first intervention in social media, during the concept generation. After the concept is generated then again you are going for online interaction. When marketing and sales approves the concept, then we build the CAD and build something we just call the product renders. When these renders are done, they are circulated through internal regional managers. These regional managers later circulate feedbacks to us. There is also a survey done on colors (e.g. festive colors or the color of the month). Our products are distributed all over the India, so we developed India specific colors.” – freelance product designer for kitchenware products taking responsibility for activities happening on the online platform*

When time-to-market becomes crucial for technology products, the design concept moves directly to the sales department and at this stage the interaction with the customers is not terminated. In fact customers are used as testers and based on their feedback, companies improve products as fully functioning solutions.

*“We follow AGILE model of product development. We quickly build something and putting online. And we keep on doing alpha testing, beta testing, everything while it is still online. We start selling and we keep making it better. And that is how most of the technology products are today built. Marketing pace is so fast, you can never make it good enough to go.” – “Breakthrough” consultant who performs as social media technical and functional consultant.*

## **4.2 Changes in NPD related activities**

### **Centralization**

For dealing with activities related to social media either a new organizational unit is created or an already established unit becomes responsible for such activities.

*“Mostly it’s lead by one team. In some cases there is a corporate marketing team, which collects information and passes to the branding team and customer service teams. In some cases, there is social media team and some companies are also coming up with chief social media officer. But the best model what we have seen is, that there is one central social media team, which has its team members working for the different departments, loosely connected to all these departments. It can be that some departments do not have a representative for social media, but those departments are connected to the social media team. Social media team act as a moderator.” – “Breakthrough” consultant*

Maturity of the brand plays an important role in deciding the structure of the social media team, (the team being formed either internally or formed with external social media experts)..Bigger companies have more rigid structure, where departments have clear and strict responsibilities. The type of social interaction depends on the size of the company and the way in which knowledge is accumulated over the years.

*“Which departments will interact with social media agency depends on maturity of the brand. If it were not a mature brand then there would be an entire chain of departments involved. A slightly more mature brand - the marketing team will be talking to this social media agency. With an even more matured brand – PR team and the marketing team take the responsibility. The most mature brand will create their own agency, develop tools and will have an interaction with all of the departments.” – “Media for all” manager*

### **Cross-department relations**

The more the organization is rigidly structured, more time is needed to take a decision and initiate some actions. However, in a competitive environment with fast product development cycles, time is a crucial resource.

*“If it is a very flexible organization then almost every department will be involved to some extent in the social media activities. In case it is very structured organization with the closed attitude, then there is a rigid information flow from one department to another, which involves a lot of time. On the other hand if the departments are closely related, customer information, customer support interaction are used, analyzed, conclusions are drawn and passed to other departments. There has to be a free flow of information between each department and maintain that there is no redundancy. The more departments that are connected to social media, stronger is the online space, and there will be free flow of information among all of them” – “Other side” expert*

Social media experts form a ‘social team’ and each member is assigned a particular department ensuring that the online knowledge flows from the social media team to their respective departments on continuous basis.

*“Each department has a social media champion who is a part of this team managing a social media project. So this is the guy who takes initiatives and talks about them in the team. This guy is involved in social media activities, but works within other department too.” – “Media for all” manager*

An instance where the entire firm becomes more open has a user centric approach and has a willingness to share information.

*“Senior management also brings lot of insights into the product, for example international flavors. My CEO travels a lot and has family based all over the world. What happens is that e.g. when a new mixer is launched, the CEO sends a link to look up motivating that these kinds of things need to be developed. This entire interaction happens on a Facebook page. I along with the marketing guys can view those Facebook posts.” – freelance product designer*

### **Departmentalization**

The ideas for the product design and features come from the market and not from the R&D department. Later these ideas are converted into concept and developed as products. Due to this reason, firms are trying to departments into separate units in such a way that there is a unit that researches the market, a unit that develops the product idea and a unit that develops the real product based on the generated idea.

*“Part of the ideation happens first. Till recently we had the technical departments, which used to design the product and now we have separated R&D department. For example, one department designs the product and later refers to the respective technical department. The technical department later develops the actual product based on their technical knowledge and legacy knowledge, ultimately saving a lot of time. Then you can start your publicity by telling the market about this new product and start selling it.” – “Safe” manager*

Another unit responsible for tracking customer satisfaction and the co-creation procedure is playing an important part in product development.

*”There should be one more very important tool for identifying the grievances. There are clients who satisfied with your explanation, but there are grievances that might not get solved. For example, we have a policy conditions that states the limitations for compensation available for a particular case –e.g. disease. A customer will understand the limitation of his compensation while signing the policy, but then he might not be happy with it. He may have a grievance still, he may publish it through the social media and probably generate a discussion on this issue. The complaint is not over, the file is not closed at that point of time.” – “Safe” manager*

### 4.3 Issues preventing from usage of social media more frequently

There are concerns, which doesn't allow firms to fully rely on social media while developing the product. One concern is the intellectual property issue.

*"Intellectual property is getting leaked therefore conceptions are circulated cautiously and not on a regular basis. But at the same time we can generate the ideas and concepts in a different way. For example, we can make an idea; get a feedback about kitchen equipment, without its body embedded completely inside the kitchen platform."* – freelance product designer

Some types of products need to be observed in reality to receive proper feedback on material, texture, etc. In this case social media is of no use.

*"We go to the shop and demonstrate our product to get a feedback. If a consumer likes the product, he wants to touch it, feel it, operate it and see how it works."* – freelance product designer

Another issue is that the target users are not yet online and observing only consumers that are in social media might not give right insights.

*"Our target consumer for kitchen appliances are mostly housewives and they are not very 'online proactive'."* – freelance product designer

Customers themselves are not willing or motivated to interact in all phases of NPD.

*"When the product reaches somewhere in the middle of product development phase, in a very crucial kind of a period, you cannot interact with the consumers. But interaction with consumers in all phases would give us an advantage in making less mistakes, in improving the products and making new products that is exactly designed for the consumer"* – freelance product designer

Limited resources that company have needs to be allocated wisely.

*"Before you launch a product you are no one. You are absolutely no one, no one is talking about you and no one is giving you a feedback or giving you anything. But you can keep a close track of competition before even entering that space. However, you need to take a decision whether you want to spend a lot of time looking at the competition before you launch or just concentrate on building the product based on the limited resources we have. But once the product is in the market, you can't take away your eye from the competition at all."* – "Breakthrough" consultant

## 5 Discussions and Conclusion

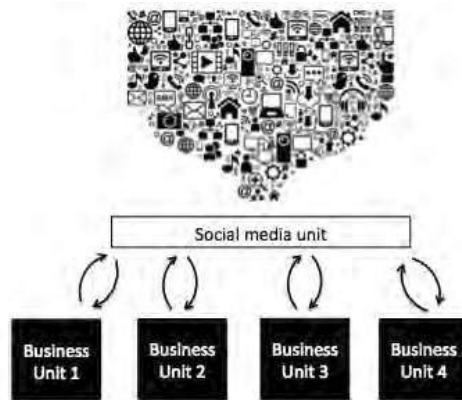
Open innovation and especially co-creation is an important topic both for scholars and for practitioners. More and more companies are trying to implement online co-creation strategies into their processes. However, still no evident practices have emerged on how to efficiently utilize the open innovation in NPD. Therefore this research has explored various company practices coping with social media integration into NPD. This study focuses on structural changes in companies' R&D structure. This research aims at providing insights rather than generalizing.

After analyzing the interviews, results are categorized into three possible structural changes that affect departments related to NPD after the integration of social media.

Firstly, social media does not cause structural changes. Companies treating social media as an additional communication tool reach out to the customers to collect their grievances. Based on Willcocks et al. (2013) findings related to the initial phases of technology adoption, (where new technology is used to replace old one) the processes around the technology to capitalize its potential are not changing.

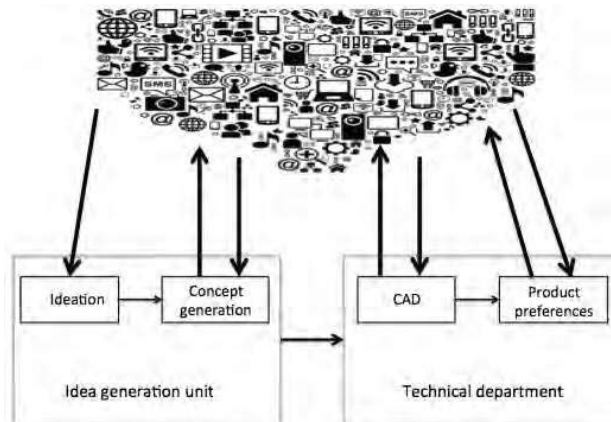
Secondly, changes are related to the addition of one more departments that is responsible for social media activities, coordination and for distributing of information to separate departments (please see figure 1). Even though collaboration among

departments is encouraged, there is still a clear division of responsibilities between different units. However having a social media unit strengthens the cross-departmental relationship. Departments have a representative for managing social media activities and the same representative co-ordinates with other departments satisfying the centralization mechanism. Such integration help establish information flow within the company, eventually creating higher interest towards social media related activities.



**Figure 1:** establishment of social media coordinating unit

Third type relates to a completely new product/service development, where the structure is modified to bring ideas from the users (please see figure 2). This study finds that companies in order to better use resources divide their R&D into multiple units. Different units are used for managing different activities, for e.g. gathering market needs, forming concept and implementing the concept to develop real product. Moreover, this research observes that once firms leave behind the traditional product development model and adopt social media, they tend to engage with their customers more frequently. Some of the observed companies even try to get customers feedback during every stage of product development.



**Figure 2:** separation of product development and intense interaction

Additionally, this research highlights some barriers towards tighter integration of social media in NPD. Schroll & Mild (2011) reveal that open innovation complements the existing vertical R&D processes. This study showcases that the culture of the customer involvement through social media defines the R&D practices of the firm - specifically, to those firms who decide to stay away from social media. Moreover, Huizingh (2011)

notices that success of open innovation depends on internal and external environment. Internal context relate to company's demographics and strategies. Demographics are mainly studied with regard to the company size: large versus small. This research enriches this discussion with the findings, which reveal that success of innovation can be affected by maturity of the brand and the structure of social media management unit. Lesser the maturity of the brand, lesser is the departments' interaction with social media unit. The flexibility of the organization also plays a crucial role. The more flexible organization is, the more departments are involved in a communication with the social media unit.

Finally, this research observes users behavior pattern. In general traditional product development has around five phases varying from ideation to go-to-market (Nambisan, 2002). This study finds that users are willing to participate in the firsts and the lasts stages, however they are not motivated to contribute in the middle stages of the product development.

As a practical contribution, this study showcases some insights, which can be useful for companies willing to adjust their internal processes to integrate social media more efficiently. This study argues that dividing the R&D into separate units for different purposes, where one unit is responsible for gathering and evaluating ideas from social media, while another is responsible for implementing them in practice, allows the firm to gradually integrate social media into NPD. Moreover, developing a unit responsible for social media activities, for communicating and coordinating social media knowledge among departments is a factor crucial for NPD.

This paper has some limitations, which could be addressed for future research. Firstly, all companies in which interviews were conducted are based in India and studies on innovation and social media related practices in different countries might produce different insights. Secondly, this research addresses only limited amount of products and services, thus future research could look into different products and services as well as different industries. Finally, this research points to the practices regarding how firms are dealing with social media leading to successful NPD and not towards any measurements, thus future research could be based on developing and testing hypothesis.

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Acquiring tacit knowledge from the overall knowledge base is strategically significant for any organization because of its intermittent nature and valuable importance. Having said that, tacit knowledge that is hard to acquire helps organizations have a sustainable advantage. Once specific tacit knowledge is acquired, firms transfer, share and replicate to increase its scale mainly through face-to-face interactions, group meetings and training sessions. As performance and competitive advantage are valuable sections for an organization, tacit knowledge, which is exclusive, improperly mobile and imperfectly replicable (which cannot be substituted), is argued to be of great importance. But to find the right tacit knowledge for sharing (which is unstructured in nature), needs right settings, enticements and proper mechanisms.



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