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Enhancing collaborative CRM with mobile technologies

Olaf Reinhold, Rainer Alt

University of Leipzig, Germany

reinhold@wifa.uni-leipzig.de, alt@wifa.uni-leipzig.de

Abstract

Mobile technology offers a high potential to significantly transform the ways how a company can interact with their customers and even with own employees. In recent years researchers started to analyze those potentials from the perspective of customer relationship management (CRM) but mainly concentrated on traditional business-to-customer (B2C) relationships. The concept of collaborative CRM extends this view of traditional CRM to virtual organizations and networked businesses. While the concept of collaborative CRM has been discussed by several authors already, the impact of mobile technology is still open to research. This paper investigates the role of mobile technology in collaborative CRM based on existing research, scenarios and supporting systems. The goal is to increase insight about the current role of mobile devices such as smartphones or personal digital agents (PDA) in collaborative CRM business scenarios and the support of these scenarios by CRM systems. From the broad scope of collaborative CRM the focus of this research is on collaboration with customers. The findings show that current mobile scenarios merely incorporate the collaborative CRM concept and that CRM systems provide only basic functionalities for incorporating mobile devices in collaborative CRM processes.

Keywords: collaborative CRM, mobile technology, CRM system

1 Customers and collaborative CRM

There is a paradox in existing concepts on customer relationship management (CRM). While all posit to increase customer orientation, the customer himself and influencing business partners are often left out of the solutions. Among the examples are traditional sales force automation (SFA) solutions which target the sales force and CRM systems which have been implemented without involving

the end customer (Rigby et al. 2001, Alt and Puschmann 2006). Usually, customer contact is conducted using surveys, outbound call center contacts, online interactions via portals, and the field staff. In comparison, technologies such as RFID or Bluetooth technology and mobile devices such as personal digital assistants (PDA) and smartphones are different, but they have the potential for enabling a closer interactions with customers (Alawairdhi et al. 2008, Atkins et al. 2006, Nori 2007). Although companies have identified the potential of mobile technology and started to incorporate them into their business models, only few of them have used the wireless technology to actively improve and tighten their customer relationships. The full potential is still unknown and target of current research. Meanwhile the world of mobile devices is changing at an ever increasing pace (e.g. larger bandwidth, better usability, reduction of production costs as also provider fees) and generates continuously new possibilities.

The concept of collaborative CRM can broadly be conceived as collaboration between one or more value chain actors (e.g. suppliers, partners, customers and further external actors such as e-markets) to achieve more customer benefits and to improve customer relationships. While collaborative CRM is still a blurred concept in itself, including mobile technologies has attracted far less attention by researchers despite an integrated view seems promising. Mobile devices do not only offer interactions with customers at any place and at any time (Smith 2007) but from the perspective of collaborative CRM they also offer the opportunity for closing the customer lifecycle, involving the customer in business processes and added value in serving him (Kadyté 2005). On the other hand topics such as data security, privacy and consumer rights require more attention than in traditional CRM processes and overloading customers with unsolicited information needs to be avoided.

In view of these opportunities this research will investigate the role of mobile technologies in real-life business scenarios from the perspective of collaborative CRM as well as to assess the contribution of CRM systems to the realization of similar scenarios. This approach connects constructs from different research domains, but targets a topic that has received only little attention from researchers so far. Therefore the research undertaken in this paper is of an exploratory nature. It first reviews the goals of CRM and CRM systems and analysis the field of collaborative CRM as well as the current application of mobile technology in collaborative CRM. Second, based on this literature review a framework is suggested for assessing the scope of mobile technology and collaborative CRM. This framework is applied on several real-life scenarios. Third, a selection of CRM systems from different market segments and their support of mobile technology are explored. The paper concludes with an overview on potential benefits of mobile devices in collaborative CRM, current application areas and the available technology support in CRM systems as well as some future scenarios and research suggestions.

2 Mobile devices in collaborative CRM

2.1 CRM and CRM systems

CRM can be defined as a ‘process that utilizes technology as an enabler to capture, analyze and disseminate current and prospective customer data to identify customer needs more precisely and to develop insightful relationships’ (Paulissen et al. 2007). It entails all aspects of relationships a company has with its customers from initial contact, pre-sales and sales to after-sales, service and support (Makatsoris and Chang 2008). One of the main success factors is the appropriate and cost-efficient maximized satisfaction of customer needs (Rigby et al. 2001, Paulissen et al. 2007). Prerequisites are an extensive knowledge about the customer needs as well as the appropriate positioning of product and service offerings within the customer lifecycle (Ives and Learmonth 1984). This requires a careful alignment of all interaction activities to the demands of each *buying cycle* stage (Osterwalder and Pigneur 2003, Muther 2002) in the customer process (Österle 2001). The overall enabler for CRM is information and its utilization. Detailed information about customers, previous interactions, experiences and future expectations is essential for the delivery of satisfying offers in cost-efficient ways. The acquisition and usage of this knowledge in customer interactions is a key element in CRM concepts, such as multi-channel-management (MCM), customer interaction centers or communicative CRM.

CRM systems are one element for the implementation of CRM concepts. Among their typical functions are the *support of CRM core processes* (Berger et al. 2009) on an operational and analytical level as well as the *integration into internal application environments* (e.g. ERP, EC-systems) and *customer interaction channels* (e.g. MCM). CRM systems traditionally cover process support in the areas of marketing, sales and service with dedicated functionalities for information aggregation (e.g. customer history) and process specific presentation (e.g. installed base and service history in service helpdesks). They enable companies to *identify particular customers* after their initial registration regardless of the interaction point and to provide *individualized services*.

In recent years, the success of companies, such as Proctor & Gamble (Kracklauer and Warmbrunn 2004) or Nike (Piller 2007), with strong collaborative elements in their business models has added a new perspective to CRM concepts. They have shown that more intensive collaboration between value chain actors can be one answer to meet customer expectations in a holistic way that are also difficult to imitate by competitors (Ehret 2004). This collaborative approach in relationships was additionally boosted by the concept of Web 2.0 (O'Reilly 2005) that promoted among others the concept of involving customers into the product design, creation as well as sales and marketing process. Research indicates that inter-organizational as well customer involving collaboration across the boundaries of individual firms is one evolution trend in CRM (Romano and Fjermestad 2003). Currently researchers try to embed these ideas into the CRM concept as well as to suggest corresponding system functionalities (Enrico 2007, Greenfield 2008, Roche 2008, Fux et al. 2007).

2.2 Collaborative CRM

The notion of collaborative CRM is still in discussion and has two interpretations that are often mixed (Reinhold and Alt 2008). The first is closely connected with communicative CRM and focuses on interaction channels (e.g. phone, fax, e-mail,

self service portals) between a company and its direct customers. The second extends the CRM concept on the level of value chains and business networks. This approach consolidates concepts of networked organizations and marketing to enable the creation of customer relations and value at a network level by sharing or pooling of network resources and capabilities (Kracklauer et al. 2004, Ehret 2004). It *enables producers, distributors and service providers* to extend their customer acquisition, retention and development beyond their company borders and even to *involve the customer* directly. But the creation and provision of collaborative offerings demands from the involved collaborators an interconnectivity of service and products as well as an *integration of involved processes*. The term collaboration as well implies that these entities work together to achieve a common goal. Customers in this context can be the external targets of collaborations but also participators in collaborative CRM processes. The latter case is closely connected with the introduced Web 2.0 concept. It requires *interactivity in interactions* during the whole customer buying cycle. All of these collaborative relationships must in addition *provide visible benefits* to each collaborator so that a continuous engagement can be ensured and the value of the collaborative work can be measured by each collaborating partner (Dunn 2005).

Due to the short history of research in collaborative CRM the body of knowledge is still fragmented. So far, the most attention was directed to identifying and utilizing business opportunities within customer-oriented processes or methods such as customer segmentation or product bundling (Rocks et al. 2005, Wirtz et al. 2004). Previous research has also shown that advanced inter-organizational business processes require dedicated IT infrastructures (Österle et al. 2001, Vervest et al. 2005, Rodon 2007). Several assessments of collaborative CRM cases have resulted in first insights of strategies (Kracklauer et al. 2004, Vervest et al. 2005), processes (Geib et al. 2006), organizational and technological requirements (Geib et al. 2006, Reinhold and Alt 2008), risks and opportunities (Ehret 2004, Kracklauer et al. 2004) as well as affected relationships (Ehret 2004, Kracklauer et al. 2004, Weber 2001).

2.3 Mobile technologies

Mobile technology is closely connected with ubiquitous computing and covers a broad technological spectrum from RFID, mobile communication devices to autonomous robots (Lyytinen and Yoo 2002, Smith 2007, Kalakota and Robinson 2001). This research draws the attention on mobile communication devices such as smartphones or PDA's with extended functionalities such as for cross media communication or global positioning system (GPS) access. Their impact on business processes and the ways of conducting business has been analyzed from numerous perspectives so far, for example on business processes in general (Fano and Gershman 2002), supply chain management (SCM) (Teck-Yong 2006), value networks (So and Chung 2005) or in relation between technology and business service (Carlsson et al. 2005). With regard to CRM *unique device characteristics* such as mobile network access points, customer interaction points, smart personal computers or tracking devices (Kalakota and Robinson 2001) seem to have the potential for enhancing collaborative CRM processes (see Figure 1). The devices can be used to accelerate processes by allowing location independent access to information resources as well as systems and to change the way *how companies interact with their customers*. They can be used to replace personal communication, help to easily identify the customers at any time and even to

determine a physical location as well as condition via GPS, network access point or near-field communication (NFC). But it has also become clear that the value of mobile technology should not be overestimated. Real benefits can only be achieved if mobile technology is implemented within the business logic and an appropriate technical infrastructure (Kalakota and Robinson 2001, Kadyté 2005). The embedment of mobile devices into business processes should therefore be accompanied by a business process redesign that makes careful use of the unique characteristics of mobile devices and *delivers additional value to customers* (Reuver et al. 2008, Tarasewich et al. 2008). Otherwise the potential users or customers will not accept them because of the drawbacks that mobile devices also imply (Gebauer 2008). Users may not only feel always contactable and traceable but also do network and sometimes service providers charge *significant fees*.

Functionality	Mobile device
Mobile network access point	Provides location independent and ubiquitous access to information, systems and services as well as various features to interact with them
Customer interaction point	Enables to identify the mobile users by the device ID, telephone number or stored codes and to access individualized services
Smart personal computer	Offers a mobile data storage as well as a platform for application to store and process data
Tracking device	Enables determination of real-world locations as well as provision of location based services

Figure 1: Unique mobile devices characteristics for collaborative CRM

In addition, mobile devices constitute *four basic functionalities* (see Figure 2) to CRM strategies. Phone communication services offer the easiest way of communication and collaboration but are cost-intensive (e.g. skilled contact persons are necessary for communication) and availability can be limited (e.g. working hours). They also offer access to automated service such as interactive voice response for automated routing of customers to skilled employees or to activate a call-back. Messaging functionalities use SMS or MMS and are cheap to realize but also insufficient for time-critical or interactive communication about complex issues. They can be used by messaging services for one-way information delivery or for simple dialogs with automated services based on standardized messages (e.g. request of account balances). Advanced mobile devices open their operating system for the execution of external applications and processing of data. This functionality can be used by mobile applications, but their development can be expensive and implies the risk of incompatibilities with other systems. Connections to the internet or mobile networks have become important in recent years because the bandwidths have significantly increased while the associated costs have decreased. This functionality offers access to web-based information via mobile portals, to participate in business processes via the portal services as well as to synchronize mobile client-server applications.

