

# AGILITY OF THE FIRM: CUSTOMERS' PERSPECTIVE

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## Abstract

*Agility is emerging as an important determinant of success and achieving sustained competitive advantage in hyper-competition. Whilst the digital natives are on the rise, ubiquitous technologies, networks and associated systems are increasingly weaving themselves into the very fabric of everyday life of both individuals and corporations. With a global shift towards “everywhere retailing”, ubiquitous contemporary information systems such as mobile CRM systems (C-CRMS) are evolving. Unlike in traditional CRMS, customers are becoming an important user group in this new paradigm. Draws on agility literature, this study examine how customers’ use of C-CRMS influence firm’s customer sensing capability, firm’s customer responding capability, and how customer-perceived firm’s responsiveness influence customers use of C-CRMS. Following the notions of agility we theorized firm’s customer agility from customers’ standpoint where we use customers’ use of C-CRMS and customer-perceived firm’s responsiveness for sensing and responding components of agility respectively. This research-in-progress paper investigates how C-CRMS facilitates firm’s customer agility, and reports the approach pursued in adopting sense and response measures of customer agility taking the customers perspective derived through extant literature.*

*Keywords: Firm Agility, Customer Agility, Customer relationship Management, Ubiquitous-CRM, mobile CRM.*

# 1. Introduction

Agility is emerging as an important determinant of success in hyper-competition (Overby et al., 2006, Roberts and Grover, 2012a) where achieving sustained competitive advantage is elusive due to hasty pace of globalization, continuously shifting customer demands, intensified competition and rapid technological advancements (Roberts and Grover, 2012b, Tallon and Pinsonneault, 2011). Meantime the digital natives, those who have grown up in a digital world are on the rise, whilst growth of ubiquitous technologies, networks and associated systems are increasingly weaving themselves into the very fabric of everyday life of both individuals and corporations (Vodanovich et al., 2010). As a result business agility and speed to market recently ranked as top two management concerns in 2011-2012 globally (Jerry et al., 2012). They further report that the business intelligence (BI), mobile wireless applications and customer relationship management featured in the top five most influential technologies in 2011-2012. Consequently organizations are increasingly attentive in engaging with customers innovatively using contemporary, pervasive and ubiquitous information and communication technologies at their disposal with the objective of sensing continuously shifting customer requirements through close collaboration, meeting their needs with ease, speed and dexterity (Overby et al., 2006, Roberts and Grover, 2012a, Roberts and Grover, 2012b). So the contemporary firms are investing heavily on new breed of pervasive ubiquitous information systems anticipating improved organizational agility and superior competitive advantage through improved customer relationships. The aforementioned new paradigm and the facts provide the background and the motivation for the current study.

The definition of agility is ambiguous in extant literature (Roberts and Grover, 2012a) yet the conceptually agility focuses on sensing and responding capabilities of the firm (Overby et al, 2006). A firm can be agile in customer-based processes, supply-chain partner interactions and in day-to-day operations (Roberts and Grover, 2012b). Different aspects of agility being in the discussion for quite a while (See table 1). However, the notion of customer agility has only been discussed briefly very recently (Roberts and Grover, 2012a, Roberts and Grover, 2012b). Roberts and Grover (2012a, 2012b), conceptually defined and operationalized firm's customer agility in their recent work but they have viewed it only from organizational perspective. However, the importance of customer's perspective of firm's customer agility cannot be ignored in such debate. When organizational perspective provides firm's internal view on its customer agility, customer's perspective provides the external view of firm's customer agility. In this research we propose to capture firm's customer agility from customers' perspective in the context of contemporary ubiquitous mobile CRM system.

As technological developments (Jerry et al., 2012), exponential influx of smartphone and smartphone applications are heavily influencing the retailing (Narayanaswami et al., 2011), a global shift towards "everywhere retailing" is growing. When Tesco's HomePlus in South Korea is testing virtual shopping via QR codes in subway stations, Woolworths Australia recently introduced their version of virtual shopping in public spaces with the aid of ubiquitous mobile applications. Such initiatives make it possible for organizations to engage with their customer pervasively and ubiquitously, 24/7 via applications such as contemporary mobile CRM systems (C-CRMS). These C-CRMS are distinctively different from traditional CRMS specifically in the way organizations use them. Traditional CRM systems are predominantly concerned with pushing information to customers (e.g. promotions and advertisements) while C-CRMS are pulling customer information from heterogeneous digitized customer touch points (e.g. from customer actions, eye ball hits, tracking mobility, tracking behavioural aspects via digitized platforms such as social media and mobile applications). In digitized business environments, every activity leaves information as a by-product (Chi et al., 2010, Zuboff, 1988), hence it is possible for organizations to analyze such information footprints to gain potentially rich insights about their customers. Consequently, until recently most information systems research has focused on IS use within organizations but the rise of new ubiquitous IS created a new set of users for organization IS: the customers who are either digital natives or digital immigrants (Shahper et al., 2010). In other words unlike traditional CRMS, customers are an important user group in C-CRMS thus users of C-CRMS are twofold: organizational users and individual customers, where both user groups are equally important in Sensemaking. This leads to our three research questions,

Q1: How does customer's use of mobile CRMS affects firm's customer sensing capability?

Q2: How does customer's use of mobile CRMS affects firm's customer responding capability?

Q3: Why does customer perceived firm's customer responsiveness positively affects customer's mobile CRMS use (sensing)?

By answering these questions, we contribute to a theory-guided understanding of the sense-response-performance process (Roberts and Grover, 2012a, Roberts and Grover, 2012b) of firms customer agility. Moreover, we will be able to isolate the factors influencing (mediate and moderate) customers use of mobile CRMS, and influence of customers' use of mobile CRMS on organizational customer agility. In addition, the theoretical grounding will help to explain the phenomenon sense-respond alignment, how contemporary mobile CRMS influence firm's customer agility, and the customers' engagement in two key components of agility: sense and respond.

The remainder of this research-in-progress paper proceeds as follows. We first examine the characteristics and origins of the notion organization agility before considering different perspectives of agility and introducing the concept 'customer agility'. Subsequently, we discuss the types of measures used in the past to measure sense and response components of agility prior to confer earlier research on system use. Then we theorize our research model and develop hypothesis before introducing the empirical research design. Afterward we discuss the measures and construct development and lastly, the paper concludes with a summary and a research outlook.

## 2. Review of literature

Despite the ambiguity of earlier agility definitions, we use Roberts & Grover's (2012a, 2012b) agility definition, the "Degree to which firms able to sense rapidly changing customer needs, anticipate, identify and respond to the opportunities and threats with ease, speed and dexterity" in this study (we refer to the traditional consumers here). Despite the contextual diversity, extant agility studies all shares the firm's viewpoint of agility (see table 1), and none to date assessed firm's agility from customers perspectives. As "a basic activity in any research field is to reach a deep understanding of the phenomena it studies" (Burton-Jones and Gallivan, 2007), we argue that the understanding of firm's customer agility required to consider customers' standpoint of organizational agility.

Source*	Study context
Yusuf et al. (1999)	Conceptual discussion on organizational drivers of manufacturing agility.
Sharifi & Zhang (1999)	Discuss concepts & development of a methodology to achieve firm agility.
Bititci et al. (2000)	Viable business structural for aligning organizational agility. Multiple case studies.
Day (2000)	Ways an organization maintain customer relationships in competition.
Sambamurthy et al. (2003)	Theorizing of strategic role of IT and firm performance.
Zain et al., (2005)	IT acceptance and organizational agility. A survey of 329 executives and managers.
Overby et al. (2006)	Conceptual work on organizational agility from integration perspective.
Oosterhout et al.,(2006)	Cross industry analysis of change factors requiring agility (survey + interviews).
Goldman et al. (2007)	Discuss how organizations become agile in competitive environments.
Setia et al. (2008)	Propose a methodology for measuring organizational agility.
Tallon & Pinnsonneault (2011)	Strategic IT alignment and agility, survey of 241 IT and business executives.
Nazir & Pinnsonneault (2012)	A conceptual discussion of how firms achieve agility through electronic integration.
Huang et al., (2012)	Role of IT leveraging competence and operational agility. A case study.
Roberts & Grover (2012a)	Firm's customer agility from organizational perspective. A survey of 188 managers.
Roberts & Grover (2012b)	Firm's customer agility from organizational perspective. A survey of 188 managers.

Table 1: Key studies on agility, study contexts and study perspectives

So far, Firm's customer agility is investigated using the two key components of agility: sensing and responding, taking the view-point of the firm (Roberts and Grover, 2012a, Roberts and Grover, 2012b). Measures of both sensing and responding components of firm's customer agility in previous studies above were heavily influenced by market orientation literature (Narver et al., 2004, Slater and Narver, 2000, Jayachandran et al., 2004, Kohli et al., 1993). Contrasting to the previous corporate IS, the novel ubiquitous IS contextually expands its reach from organizational borders to the external users (Shahper et al., 2010) such as customers of corporations. As such the relevance of customers involvement in corporate IS use is increasing, as discussed in Sensemaking literature (Po-An Hsieh et al., 2011). Enriching their use of mobile CRMS is important in extracting more value from the mobile CRMS. As every activity in digitized environment leaves information as a by-product (Chi et al., 2010, Zuboff, 1988) analysis of resultant information footprints could produce potentially rich insights about the respective users (customers in this case). As a result, in this study we surrogate customer's use of mobile CRMS to customer sensing capability.

Use has been established a prominent topic in information systems (IS) research (Burton-Jones and Gallivan, 2007, Burton-Jones and Straub, 2006, Venkatesh et al., 2003, Venkatesh et al., 2008, DeLone and McLean, 1992). In this research we employ Burton-Jones and Straub (2006) work on use to understand Ubiquitous mobile-CRM system use. Further, Burton-Jones and Grange (2012) recent work on agility discuss the concept of effective use where they define effective use as "using a system in a way that helps attain the goals for using the system" where it essentially talks about the benefits of using the system to the respective user. However, in such discussions, "customers use of corporate IS" is missing as the extant research was predominantly focussed on the use of IS in organizations. Whilst customer's use of corporate IS has the potential of delivering benefits to both customers and the organizations, such discussion is elusive in the current literature. Meanwhile the emergence of ubiquitous IS (Shahper et al., 2010), and the rise of digital natives (Vodanovich et al., 2010) customers use of corporate IS becoming increasingly relevant and important in such academic debate. As such, in this study we adopt the perspective of customers' use of mobile CRMS in IT Sensemaking (Po-An Hsieh et al., 2011). As the techno savvy new generations prefer to spend more time online using different types of digital devices (Vodanovich et al., 2010), firm's are able to learn more about their customers via the information foot prints they leave as a by-product in such digitized environments (Chi et al., 2010, Zuboff, 1988). Therefore, the customer's use of mobile CRMS could be used as a surrogate measure for firm's customer sensing. We argue here that the degree to which customer uses the mobile-CRMS defines the degree to which the firm is able to know about the customer in the context of this study. System usage in general was measured using both self-reported and computer recorded measures (Straub et al., 1995), customers' use of mobile applications traditionally measured using panel / log data (de Reuver et al., 2012) as well as self-reported usage (Verkasalo et al., 2010). Following the previous research on IS usage in this study we adopt measures from extant system usage literature to measure customers' use of mobile-CRMS as a surrogate measure for firm's sensing capability. We employ four broad dimensions of usage measures: frequency of use, functionality used, tasks performed and proportion/consistency of use to formulate effective/meaningful use as a proxy indicator for customer sensing in this research.

As Overby et al. (2006) states, responsiveness is basically refers to the variety of responsive actions that a firm can make with ease, speed, and dexterity upon sensing customer base opportunities and threats. Measurement of organizational responsiveness is deeply rooted in to market orientation literature (Kohli et al., 1993, Jayachandran et al., 2004). While Kohli et al., (1993), measured responsiveness using fourteen different likert based questions, Jayachandran et al., (2004) measured customer responsiveness with measurement items in two groups: customer response speed and customer response expertise. Recently, Roberts & Grover (2012a, 2012b) measured firm's customer agility adopting the items developed by Kohli et al., (1993) and Jayachandran et al., (2004). However, the firm's responsiveness measures predominantly looked from an organizational stand-point. Adopting a perspective which is external to the firm, in this research we pursue the customers' perspective where we measure firm's customer responsiveness using customer's perceptual measures.

### 3. Theoretical framing

We defined firm’s customer agility as the degree to which the firm is able to sense and respond to customer-based opportunities expertly with ease, speed, and dexterity, following the earlier notions of organizational agility (Overby et al., 2006, Roberts and Grover, 2012a, Roberts and Grover, 2012b). The two main constructs of our conception include sensing and responding components. In this research, the sensing component predominantly refers to the degree to which a firm’s able to sense rapidly changing customer based needs, opportunities and threats. Consequently the customer’s use of mobile-CRM could generate rich insights about individual preferences using the information footprints that comes as a by-product (Chi et al., 2010, Zuboff, 1988), we propose customer’s use of mobile CRMS as a surrogate measure for firm’s customer (traditional individual customers) sensing capability. So, we propose our first hypothesis: H1: Customer’s mobile CRM use positively affects firm’s customer sensing capability.

Responsiveness refers to the variety of responsive actions that a firm can make with ease, speed, and dexterity upon sensing a customer base opportunity and/or a threat. In other words, once an opportunity is sensed then the firm needs to take necessary responsive actions to gain returns (Roberts and Grover, 2012a). The basic premise here is to match the responsive actions to what the firm has sensed. Thus, firms aligned in their sensing and responding activities are more likely to extract more value from their agile capability (Roberts and Grover, 2012a). Also, Roberts and Grover’s (2012a) mentions that sense-response-performance is a process. That implies the existence of a significant intervening mechanism between performances and sensing, where a firm’s responding capability mediates the relationship between firm’s customer sensing and its performance. In the context of our study, a firm’s responding capability depends on its ability to sense an opportunity, which is in turn dependent on the degree, or the extent to which customers are using the mobile CRMS. Based on this reasoning, we hypothesize: H2: Customer’s mobile CRM use positively affects firm’s customer responding capability.

When a firm’s responsive actions are influenced by its customer sensing activities (In this research via customer’s use of mobile CRMS), customers perceive that the firm is responding to their requirements from what they actually experience. The subsequent positive customer perceptions then stimulate the mobile CRMS use. Based on this reasoning, we hypothesize: H3: Customer’s perceived responsiveness positively affects customer’s use of mobile CRM (surrogates sensing).

Based on the aforementioned discussion we propose the following conceptual model (Figure 2).

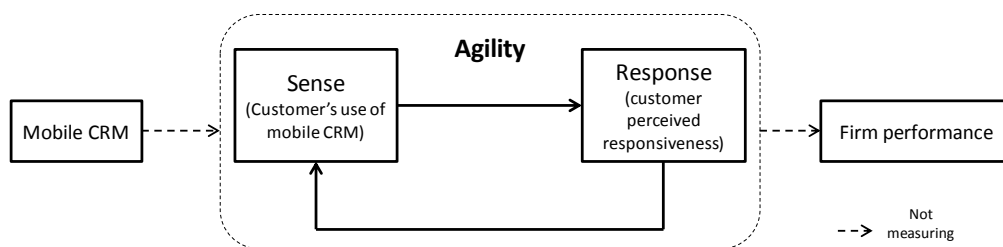


Figure 2 Conceptual model: Customers use of mobile CRMS, customer perceived firm’s responsiveness and firm’s customer agility.

### 4. Measures development

We followed the guidelines recommended by Churchill (1979) for developing measures of our constructs. We first conducted a literature search on firm’s customer agility to specify the domain of the construct (see Table 1). Following the definition of firm’s customer agility, we further reviewed literature to develop sub measures and measurement items for each construct of firm’s customer agility. We used the construct “Use” as a surrogate measure for sensing component of agility and customer-perceived firm’s responsiveness for responding component of agility. Further we followed

the guidelines prescribed for usage constructs development by Burton-Jones and Straub (2006). Following our literature review, we generated sample items and validated measures of similar constructs for both use (Burton-Jones and Gallivan, 2007, Burton-Jones and Straub, 2006, Venkatesh et al., 2003) and perceived firm's responsiveness (Jayachandran et al., 2004, Kohli et al., 1993, Roberts and Grover, 2012a). Adopted measures from the scales validated in prior studies as described above were then pre-tested with a group of PhD researchers to assess the reliability and validity of our measures. Table 3 below lists the summary of constructs and sub-constructs and their sources.

<b>Construct</b>	<b>Sub-constructs</b>	<b>Measure source</b>
Customer sensing capability (mobile CRM use as a surrogate measure of sensing capability, a formative construct)	Frequency of use* Functions used* Tasks performed* Consistency/proportion of use*	(Burton-Jones and Straub, 2006, Venkatesh et al., 2008, Venkatesh et al., 2003, Barki et al., 2007)
Customer responding capability (customer perceived firm's responsiveness, a reflective measure)	Response speed* Response expertise*	(Jayachandran et al., 2004, Kohli et al., 1993, Roberts and Grover, 2012a, Roberts and Grover, 2012b)

Table 3: Construct measures (\*individual measures would be provided upon request)

## 5. Research outlook and conclusion

Whilst many aspects of firm's agility can be studied, we conceptualized a research model that relates firm's customer agility to firm performance using the context ubiquitous mobile CRMS. Our conceptual model contains two distinctive antecedents to customer agility's two components: sensing and responding. We theorized that in ubiquitous mobile CRMS, customers' use of mobile CRMS would shape firm's customer sensing capability; sense-response alignment influences firm's overall responsiveness (hence customer perceived responsiveness); and customer-perceived firm's responsiveness influences their repeat use of mobile CRMS making it an iterative process. In essence, this study attempts to view firm's customer agility from customer's perspective where existing research predominantly viewed it from the organizational perspective. This novel approach is becoming extremely relevant and important with the emergence of ubiquitous information systems, digital natives, and an increasing number of digital immigrants. However, a company can be agile without getting noticed and customers' do not necessarily perceive the company as an agile organization, yet the way customers perceive a firm is important in their repurchase decisions.

This study is currently progressing at the data collection phase. This research at its completion is expected to make several contributions, both theoretical and practical. For theory, we contribute to the agility literature by an examination of the characteristics and foundation of the concept of organizational agility from a different perspective of agility; introducing the concept 'customers perspective of firm agility'. Whilst our study proposes that the agility is domain-specific, comprises the two key components sensing and responding, and expertise and speediness of the response, we introduce novel constructs and measures. By introducing customer's use of mobile CRMS and its relationship to firm performance we contribute to the IT Sensemaking literature and reconceptualise the corporate IS use by introducing the new breed of user cohort; customers. Furthermore, this research highlights the customer's role in corporate IT Sensemaking. For practice, it highlights the importance of customers' perceptions in firm's performance and customer-focused technology adoption in organizations.

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