THE INFLUENCE OF INTERNET-ENABLED TECHNOLOGIES ON CUSTOMER AGILITY: A STRATEGIC-COGNITIVE PERSPECTIVE

Research-in-Progress

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Abstract

In fast changing business environments, firms' dynamic capabilities help them to identify and exploit market opportunities. Customer agility is a vital dynamic capability, which helps managers identify untapped customer demand and reconfigure existing firm assets and capabilities. The purpose of this research-in-progress paper is to set the stage for an empirical study, which aims to explore how internet-enabled technologies influence the development of customer agility. From a theoretical standpoint, this study proposes to draw on two streams of literature: (a) concepts associated with the notion of dynamic capabilities and (b) the literature on cognitive biases and frame reorganization. Broadly, the study intends to contribute to the existing IS research by bridging the strategic and cognitive dimensions of developing internet-enabled customer agility.

Keywords: Internet-enabled technologies, customer agility, dynamic capabilities, cognitive biases, frame transformation, case study

Introduction

The advent of the internet has brought to light many opportunities for firms. Internet technologies have created a global market space by facilitating the increasing interconnectedness of local markets regardless of geographic location (Alden et al. 1999; Cunnane 2011; Dean et al. 2012). Firms can now tap into the global market just by launching a website, without dealing with other costly country specific investments (Kotha et al. 2001).

However, the internet is not a panacea for all of the challenges faced by firms in the business environment (Barabasi 2003). Remarkable success stories of internet-enabled ventures (e.g. Amazon, eBay) sit alongside countless failures of on-line companies. Furthermore, the impact of various internet-enabled technologies on economic performance varies widely between firms and industries (Sambamurthy et al. 2003; Tan et al. 2010). What the internet can actually do is to improve the ability of organizations to adapt to the fast-changing external environment (Barabasi 2003). Considering the fierce competition firms face due to increasing globalization, firm agility becomes increasingly important. Agility has been defined as the ability of firms to sense and seize market opportunities in a nimble and efficient fashion (Brown and Eisenhardt 1997; D'Aveni 1994). Sambamurthy et al. (2003) disaggregated agility into three intertwined components: customer agility, partnering agility and operational agility. Drawing on the seminal work of Sambamurthy et al. (2003), we conceptualize customer agility as involving two recursive and interconnected strategic activities: (i) the co-opting of customers in the organizational process of detecting/sensing and seizing market opportunities (or threats); (ii) taking customer-oriented competitive action by reshaping or reconfiguring firm capabilities. In this study, we choose to focus exclusively on customer agility, because the relationship between the firm and its customers has a direct and vital effect on the firm's ability to sell products/services and, thus, to "make a living" and to survive in highly competitive environments (Helfat et al. 2007). Partnering agility, defined as "the firm's ability to leverage the assets, knowledge and competencies of suppliers, distributors, contract manufacturers, etc." (Sambamurthy et al. 2003, p. 245) through close collaborations, and operational agility, defined as "the firm's ability to accomplish speed, accuracy, and cost economy in the exploitation of opportunities" (Sambamurthy et al. 2003, p. 245) are not sufficient to ensure that firms can survive in the absence of customer agility, although they do have a significant influence on firm performance.

Customer agility is now attracting significantly more attention, both from academics and practitioners, due to the increasing proliferation of internet-enabled technologies. Firms are slowly coming around to the idea that customers are a valuable source for innovative ideas. They can participate in the creation, development and/or design of new products, test the products and, eventually, contribute to the dissemination of innovations (Nambisan 2002; Sambamurthy et al. 2003). Moreover, listening to the "voice" of the customers can be crucial for identifying new or niche markets with untapped customer demand (Clemons 2008). Clemons and Nunes (2011) argue that firms can avoid direct competition by finding market "sweet spots" and offering niche products that "resonate" with the needs of the customers. Customers may prefer products that better match their needs and expectations, rather than better products in the absolute sense (Bell 2003; Clemons and Nunes 2011). Internet-enabled technologies offer numerous possibilities for organizations to access the "wisdom" of the customers (e.g. through building and developing virtual communities, social computing etc.), and to benefit from "ecosystem-based innovation and growth" (Li et al. 2011), thereby creating and enhancing customer agility (Sambamurthy et al. 2003).

However, hitherto, little empirical research focusing on the phenomenon of internet-enabled customer agility has been conducted (e.g. Roberts and Grover 2012). Furthermore, we have identified to two important gaps in the existing literature on customer agility.

First, although recent IS literature has emphasized the potential contribution of internet-enabled technologies to customer agility development (e.g. Li et al. 2011; Sambamurthy et al. 2003), little is known about the underlying organizational processes that contribute to the development of customer agility through the use of internet technology. Roberts and Grover (2012) have provided valuable insights, using a quantitative approach, about the relationship between IT-based tools, on the one hand, and customer agility and competitive action efficacy, on the other. However, the underlying processes were treated as a black box. These multifaceted complex processes through which customer agility is achieved

involve social interactions and cannot be easily quantified. Therefore, a qualitative approach is required in order to explore these processes (Ambrosini and Bowman 2009).

Second, prior strategy research has emphasized from a theoretical perspective that sensing and seizing opportunities or threats as well as reshaping capabilities in order to maintain competitiveness have important cognitive and psychological foundations, requiring both unbiased and accurate managerial decision-making, and a thorough understanding of the customer choosing patterns and drivers (Hodgkinson and Healy 2011; Teece 2007). Sensing entails exploring and analyzing markets in search for innovation opportunities or unmet customer needs. A major concern here is the extent to which, efficient and rational filtering of the managerial "information overload" is possible (Clemons and Nunes 2011). Seizing involves selecting from the identified opportunities and making high-quality investment decisions. Finally, competitively reshaping assets and capabilities requires making complicated, customer-aware, interdependent decisions, in order to achieve evolutionary fitness (Hodgkinson and Healy 2011). However, these psychological and cognitive antecedents have hardly received any attention in the extant empirical research. Without a thorough analysis of these antecedents and their implications, a full understanding of (internet-enabled) customer agility is not possible. We argue that research on internet-enabled customer agility, just like information systems research in general, requires not only an analysis of technical aspects, but also an understanding of the equally important organizational and cognitive processes.

In this study, we address the identified gaps by exploring how managers strategically employ internet-enabled technologies in order to shape and adjust their (cognitive) perception regarding the customers' needs and preferences, which in turn leads to the attainment of customer agility (i.e. improved processes of sensing and seizing of opportunities, and taking competitive action). Theoretically, we adopt a strategic-cognitive perspective and draw on the dynamic capabilities literature (the strategic angle) and the literature on cognitive biases and frame reorganization (the cognition angle). In the next sections, we suggest that the use of the two lenses in conjunction will help us develop a multilevel understanding of how internet-enabled technologies influence the creation and advancement of customer agility in organizations. Moreover, we aim to develop a framework which may serve as a signpost for future research on dynamic capabilities in general and customer agility in particular.

RBV and dynamic capabilities

A vast body of research holds that the Resource Based View (RBV) plays an important role in explaining the performance of firms. Under the RBV, resources that are proprietary, scarce, difficult to imitate and non-substitutable represent the sources of the firm's competitive advantage (Barney 1991). The RBV rests on the assumptions that resources are heterogeneously distributed across firms and that this distribution and the competitive advantage it determines can be sustained over time (Ambrosini and Bowman 2009; Barney 1991). Since the RBV provides an essentially static perspective (Lockett et al. 2009), it may not fully address how firms achieve sustainable competitive advantage in rapidly-changing and volatile markets. The notion of dynamic capabilities enhances the RBV by explaining how valuable firm resources are created, integrated within the firm, and (re)combined in order to continuously develop competitive advantage (Ambrosini and Bowman 2009; Eisenhardt and Martin 2000; Teece et al. 1997). While the RBV focuses on path-dependent long-term competitive advantage, the dynamic capabilities perspective argues for the adaptation, integration and reconfiguration of resources in order to achieve a series of temporary competitive advantages, a more realistic outcome in fast-changing environments (Eisenhardt and Martin 2000). Although multiple definitions of the dynamic capability concept are offered in the literature, most borrow heavily from Teece et al.'s (1997, p. 516) notion of dynamic capability as "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments".

There have been some variations in explicating the link between dynamic capabilities and competitive advantage. Some scholars (e.g., Lee et al. 2002; Teece 2007; Teece et al. 1997) advocate for a direct, explicit relation between dynamic capabilities and competitive advantage, while others (e.g., Bowman and Ambrosini 2003; Eisenhardt and Martin 2000; Helfat et al. 2007) claim the link to be indirect, arguing that dynamic capabilities first affect firm resources, processes, and competencies which in turn are responsible for attaining competitive advantage (Zott 2003). Eisenhardt and Martin (2000) argue that

while necessary, dynamic capabilities are not sufficient to achieve competitive advantage. Furthermore, although they are idiosyncratic in detail, dynamic capabilities do not have to be unique or non-substitutable, since their value relative to competitive advantage rests in the difficult to imitate configurations of firm-specific resources that they provide. Therefore, dynamic capabilities are more equifinal (i.e. although path-dependent, there are many paths leading to similar dynamic capabilities), homogenous and substitutable across firms than traditional RBV capabilities (Eisenhardt and Martin 2000).

Since the relationship between dynamic capabilities and economic performance cannot be precisely articulated, two alternative methods for evaluating the performance of dynamic capabilities have been suggested: technical and evolutionary fitness (Helfat et al. 2007). Technical fitness is an assessment of how well a capability is performing its intended function. External or evolutionary fitness, on the other hand, is an evaluation of the degree to which a capability enables the organization to survive (Helfat et al. 2007; Teece 2007). Dynamic capabilities can also be analytically framed in relation to how organizations (1) sense or identify opportunities and threats, (2) take action and seize the envisioned opportunities, and (3) maintain or improve competitiveness by upgrading, combining, reshaping, reconstructing firm assets, routines or processes (Teece 2007).

The capability to sense opportunities and threats involves scanning, exploring and creatively analyzing and interpreting customer needs, technological possibilities and developments in the competitive external environment. The ability to spot opportunities and threats is influenced by various factors such as the individual managerial capabilities and acquired knowledge, differential access to information and the managerial ability to develop new knowledge from the available information, the ability of managers to understand customers' needs and to predict future technological developments and possible reactions of competitors, suppliers, customers, regulatory and governmental bodies (Teece 2007).

When new opportunities (or threats) are detected they are often addressed by new or updated products, services or internal processes (Teece 2007). Investment decisions require choosing amongst multiple uncertain alternatives. Managers must commit to a certain business model, thus choosing between technological options, targeted market segments, sales strategies, etc. Aside from estimating future costs and revenues, managers need to consider the future value of intangibles, path-dependencies (i.e. present investment decisions can exclude future investment possibilities), co-specialization (i.e. the performance of an asset may be related to its use in conjunction with other assets), irreversibility and opportunity costs (Teece 2007). Furthermore, from a cognitive standpoint, managers need to overcome various biases associated with decision-making under uncertainty, such as: excessive optimism, hubris, loss aversion, isolation errors, and illusions of validity (Teece 2007; Tversky and Kahneman 1974).

When alert managers sense and seize opportunities, organizations achieve profits and grow in a path-dependent manner. However, in order to remain competitive and achieve evolutionary fitness, assets and capabilities must be reshaped, recombined and realigned in order to respond to changes in customer preferences and technological innovations (Teece 2007). Similarly, internal processes and routines need to be continuously adjusted in order prevent rigidities, inertia, shirking, free riding and complacency (Teece 2007). Again, these organizational processes rely heavily on managerial sense- and decision-making (Teece 2007).

Dynamic capabilities are highly dependent on prior knowledge and cognitive and creative abilities of managers (Helfat et al. 2007; Eisenhardt and Martin 2000; Teece 2007). Risks and vulnerabilities caused by the concentration of key decisions in the hands of few may be reduced by integrating sensing, seizing and reshaping capabilities in the organizational culture or internal practices. Organizations are known to set up processes at different hierarchical levels to collect and analyze information regarding customer needs, competitor behavior, technological or regulatory developments. Once such information is filtered, appropriate courses of action are decided through internal discussions and debates (Teece 2007). Especially in fast-changing environments, it could be extremely important to involve collaborators (e.g. customers, suppliers) since they could provide innovative inputs into the processes of developing dynamic capabilities (Teece 2007). It is in this sense that internet technologies-enabled customer agility, as previously defined, could prove to be a crucial dynamic capability. Customers are well placed to understand the potential of technological innovations and may be co-opted in the development and testing new of products and services. Indeed, new technologies that do not properly address customer needs are unlikely to be commercially successful (Bell 2003; Teece 2007). In other words, although

necessary, technological fitness alone may not be sufficient for organizations to achieve evolutionary fitness (Helfat et al. 2007).

Cognitive biases and frame reorganization

Ease versus strain

Since managerial cognition and sense-making play key roles in the development of customer agility, a thorough understanding of the human cognitive processes and the corresponding biases is required. Numerous scholars support the idea that managerial thinking/judgment operates on two modes or systems of information processing: one of them is faster and more automatic, while the second is slower and requires effort and control (Schneider and Shiffrin 1977). In the academic literature, there is some consensus about the characteristics and functioning of the two modes or systems, although they have been given a variety of names: reflexive and reflective systems (Lieberman 2007), hot and cold modes (Bernheim and Rangel 2004), experiential and analytic systems (Epstein 1994). Throughout this study, we adopt Kahneman's (2011) framework of intuitive and rational systems.

The managerial intuitive system is viewed as something that is constantly at work and therefore not easily shut down. The intuitive system effortlessly and continuously feeds impressions and feelings related to the information or stimuli it perceives to the rational system, based on which beliefs are formed and decisions are made (Kahneman 2011). Although the rational system is responsible for self-control and for a critical assessment of the intuitive impulses, the latter play a major part in many decisions and judgments managers make (Kahneman 2011). Unlike the intuitive system, the extensive use of the rational system requires effort and self-control which leads to ego depletion (Baumeister et al. 1998). According to Baumeister et al. (1998), ego depletion is a loss of motivation to invest mental effort in a new challenge after previously completing another self-control requiring task. These functional specificities of the two systems suggest that the "law of least effort" - if a certain task (e.g. making a decision) can be competed in several ways, people will tend to prefer the least demanding solution - is also applicable to cognitive processes (Kool et al. 2010).

Most managers find the cognitive effort required to implement strategy at least slightly unpleasant. Therefore, they tend to rely on the intuitive system and employ a few heuristic procedures to provide actionable, but often inaccurate answers to difficult probabilistic or predictive questions, which leads to a mental state of cognitive ease (Kahneman 2011; Tversky and Kahneman 1974), also referred to as processing fluency (Alter and Oppenheimer 2009). On the other hand, constantly employing the rational system generates a state of cognitive strain (Kahneman 2011). It is evident from the business histories of many organizations that the heuristics used to simplify complex judgmental tasks are often the source of multiple biases in judgment and decision making (Tversky and Kahneman 1974).

Frame-based heuristic principles and related biases

One of the responsibilities of the managerial intuitive system is to monitor events going on in the external environment as well as inside the mind, and to accumulate information stored in memory on which it will build and continuously update a frame (schema) of the world to be used as a benchmark for normality (or the norm) (Fiske and Taylor 1991; Goffman 1974; Kahneman and Miller 1986). The frame includes links and associations between ideas, beliefs, events, actions, experiences, on the one hand, and feelings, outcomes or consequences, on the other (Kahneman 2011; Kahneman and Miller 1986). In time and through experience, these links strengthen and become the frame that managers use to assess and interpret the present unfolding of events, to generate expectations for the future and to guide their decisions and actions (Goffman 1974, Kahneman 2011).

The managers' cognitive schema is constructed based on prototypical imagery. These prototypes (or stereotypes when they refer to social categories) become benchmarks against which expectations are generated (Kahneman 2011). Building expectations about various organizational strategic outcomes based on how well something/someone matches its associated prototypical image has been referred to as representativeness heuristic, and it is often the source of biased and inaccurate managerial decisions

(Kahneman 2011; Tversky and Kahneman 1974). For example, estimating the response of a wide range of (potential) customers to a certain product based on the reactions of a few, yet seemingly representative customers might have disastrous consequences for managers relying on representativeness. If the predicted outcome is highly representative for the input information, managers may exhibit unwarranted confidence in their predictions, injecting into them illusions of validity and skill (Kahneman 2011; Tversky and Kahneman 1974). When supported by groups that shares similar beliefs and values (e.g. in environments with strong professional culture, like the financial sector), illusory beliefs about validity and skill become particularly powerful and difficult to overcome, similar to the metaphoric "psychic prisons" of Bolman and Deal (2003). Moreover, overconfidence and cognitive illusions of validity and skill often lead to hubris or competition neglect. In these cases, managers ignore competitors and their actions, generating excessive competition which markets cannot absorb (Camerer and Lovallo 1999).

Judgments based on representativeness are also supported by the coherence-seeking part of the intuitive system. Managers are known to have an affinity for solutions or outcomes that uncritically reinforce their beliefs, values, expectations and, generally, their cognitive schema about the world (Kahneman 2011). Often, managers appear willing to mentally construct their cognitive frame from incomplete information that matches their expectations. In this case, managers may choose to discard key information that is conflicting with their cognitive schema, thus preferring information that is incomplete but coherent relative to their initial framing norms (Fiske and Taylor 1991). Similarly, due to theory induced blindness (Kahneman 2011), managers find it very difficult to admit that a particular theory that they have already accepted and used may be flawed or obsolete.

The literature on managerial cognition also highlights another kind of heuristic, viz., availability heuristic. It refers to managerial expectations of certain outcomes based on the ease with which such occurrences can be accessed from memory (Tversky and Kahneman 1974). The retrievability of instances from memory is often biased by the familiarity and salience of some occurrences compared to others within the cognitive frame. Also recent events are more easily accessible the earlier ones. Furthermore, availability heuristic is also affected by the easiness with which certain instances generated by a rule can be imagined. Occurrences that can be easily imagined or retrieved from memory will be expected to be more frequent than those that require effort (Tversky and Kahneman 1974). A third kind of managerial heuristic highlighted in the literature is the affect heuristic, which refers to decision-making based on feelings/emotions attached to a certain action or event (Slovic et al. 2004). Availability and affect heuristics can also contribute to the construction of the cognitive frame, leading to a cognitive vicious cycle (e.g. occurrences that can be easily generated by the imagination or retrieved from memory will become more salient).

All these heuristic principles rely on and are applied relative to the managers' cognitive frame. Cognitive frames (general or domain-specific) can differ from one person (or group of individuals) to another, from one moment in time to another. Differences between cognitive frames have been referred to "frame misalignments" (Benford and Snow 2000; Snow et al. 1986). In our specific context of customer agility, frame misalignments refer to different interpretations that managers, on the one hand, and customers, on the other, assign to customers' needs and preferences. Often, managers take customers' cognitive frames for granted and consider that customers share their cognitive frame by default. Moreover, they make heuristics-based decisions in the context of frame misalignments which can seriously impair the firm-customers relationship (Kahneman 2011; Kaplan 2008).

Frame transformation and cognitive reorientations

When breaches of normality or anomalies relative to the existing cognitive frame (schema) are detected, managers can experience surprise or a dissonance between their experience and their frame-based expectations (Fiske and Taylor, 1991). Surprise is a crucial mental process because it employs the rational system in an attempt to make sense of what is going on in the environment, adjust the existing cognitive frame and determine the appropriate course of action (Balogun and Johnson 2004).

Cognitive frames are "dynamic phenomena", they are flexible and context specific (Lin and Silva 2005). Cognitive frames are adjusted through experiences and interactions (Kaplan 2008). In this sense, various micro-mobilization mechanisms (i.e. "interactive and communicative processes") (Benford and Snow 2000; Snow et al. 1986) can be employed in order to achieve frame transformation. The frame

transformation refers to a "systematic alteration" (Goffman 1974) of the managers' view of the world and of what it going on in that world (Snow et al. 1986). The consequences of frame transformation include reduced ambiguity and uncertainty, and fewer "misframings", interpretive biases and "frame disputes" (Goffman 1974).

Managerial sense-making and cognitive frame adjustment/transformation involves collecting and analyzing information through various formal or informal means such as interactions, conversations, narratives, documents etc (Balogun and Johnson 2004). Surprise and sense-making are the drivers of cognitive reorientations (Gioia et al. 1994). Various models for frames or schemata adjustment/transformation have been identified in the cognition literature. Bartunek (1984) advanced a conflict model, in which interactions of old and new perspectives generate schema change. Labianca et al. (2000) support the conversion model, where frame transformation is a result of salient occurrences that contradict previous experience. Weber and Crocker (1983) argue in favor of a bookkeeping model, according to which frames change gradually, with every piece of divergent information.

The temptation to use heuristic principles in managerial decision-making may not be easy to overcome, considering that the unpleasantness of cognitive effort and the fact that the intuitive system is providing tentative solutions to most problems. However, in the case of customer agility, frame alignment between managers and customers has the potential to improve the outcome of heuristic-based sense-making and to reduce the frequency of cognitive illusions, thereby improving overall managerial decision-making (Fiske and Taylor 1991; Goffman 1974; Kahneman 2011). Therefore, we argue that internet-enabled technologies can represent an effective tool which managers could strategically use in order to better relate to customers and to adjust or transform their cognitive frames regarding customers' needs and preferences.

Internet-enabled technologies and customer agility

In this study we aim to develop a framework which suggests that internet-enabled technologies can contribute to the transformation of managerial cognitive frames, thereby improving decision-making. We also argue that, through this managerial cognitive reorganization, internet-enabled technologies have the potential to significantly influence the creation and development of customer agility with its two components: the sensing and seizing of opportunities are supported by the continuous communication between managers and customers, while the reshaping of capabilities can be achieved through customer driven innovative products and improved reputation and trustworthiness.

Employing internet-enabled tools such as blogs, forums, wikis and virtual social networks, can provide managers with the possibility of interacting with customers and accessing a multitude of perspectives regarding (potential) customer needs, technological opportunities and how competitors are addressing these needs and opportunities, thus allowing decision-makers to rationally develop new knowledge based on the acquired information and transform the existing cognitive frame regarding the firm's external environment. An improved schema will most likely help decision-makers overcome cognitive biases generated by representativeness heuristic such as illusions of validity and skill, overconfidence, theory induced blindness. Since customer opinions about competitor actions and products can easily be acquired, hubris or competition neglect becomes less likely. Furthermore, internet media can help decision-makers cross-check, challenge and adjust assumptions generated by affect or availability heuristics regarding customer profiles and the characteristics of the competitive environment. Internet media can offer extended samples for managers to test alternative hypotheses and technological prototypes at relatively low costs, reducing biases related to small samples. Aside from developing innovative products to address detected customer needs, the internet can also be used to identify and leverage user-led innovations (Teece 2007). Using internet-enabled technologies and media to bring managers closer to customers is likely to significantly improve the processes of sensing and seizing opportunities and threats by providing valuable market information and knowledge at reduced interaction costs (Li et al. 2011).

Using internet-enabled technologies as a vehicle for frame transforming/adjusting interactions with customers is particularly important in the turbulent or high-velocity environments described by Eisenhardt & Martin (2000). In turbulent environments managers must continuously adjust cognitive frames in order to account for changes in customer needs and preferences, and technological innovations.

Managers can use the internet and the communication media it enables to shape valuable intangible assets, such as reputation and trustworthiness, which are important determinants of competitive advantage since they arise from socially complex processes, and are difficult to trade, imitate or substitute (Barney 1994; Hall 1992). Internet-enabled technologies can contribute in cost efficient manner to the creation of a coherent customer cognitive schema. Building firm profiles on virtual social networks like Facebook, MySpace or Twitter can improve the customers' familiarity with the firm's value proposition. An increasing proportion of the world's urban population is using social media and, as in most complex networks, clustering occurs here as well. Consumers tend to look for individuals with whom they share some similarities: background, preferences, hobbies, jobs, etc. Moreover, consumers appear to value peer recommendations when contemplating a new purchase (Cunnane 2011). Thus, firms need to identify the clusters relevant for their customer base and then to establish links with the hubs (opinion leaders, power users, influencers) that are central for the respective cluster or subculture, as information is spread most efficiently through these hubs (Barabasi 2003). Similarly, firms can establish links with bloggers or micro-bloggers that can be considered trendsetters for the targeted consumers. Email marketing campaigns can also be deployed through social media (Cunnane 2011). Email marketing is the least expensive method of direct marketing which allows firms to reach a vast audience with offerings personalized according to age, gender, education, lifestyle, etc. (Cunnane 2011). Follow-up emails can be used for consumer feedback or to measure satisfaction. Considering the increasing popularity of internet connected smart phones, mobile web marketing may also be deployed.

However, considering that firm reputation is very important in the on-line environment since demand on the internet is determined by attention and awareness, which in turn are oriented towards the most trustworthy and appreciated firms (Kotha et al. 2001), firms must constantly monitor (preferably using specialized software) the comments regarding their activity formulated on forums, social media, blogs or micro-blogs, in order to be able to react immediately to consumer inquires and complaints (Cunnane 2011). Strong, negative reviews can be very detrimental for firm reputation (Clemons 2008), because such reviews attract disproportionate attention and become more salient and easily accessible in the customers' memory, appearing less unusual than they really are (Kahneman 2011). Therefore, the causes of such reviews must be thoroughly investigated and addressed.

Methodology

In order to address our research question the qualitative case study methodology will be employed in the context of two medium-sized digitally-driven UK firms. The exploratory case study methodology (Yin 1994) is appropriate for our research endeavor since the processes through which internet-enabled technologies mediate cognitive biases, thereby improving customer agility, cannot be easily quantified (Marshall and Rossman 2011; Pratt 2009). Furthermore, in order to explore this multifaceted, complex phenomenon, knowledge and theoretical arguments must be developed from the analysis of subjective interpretations and perceptions of informants (Walsham 1995). Placing our analysis of the proposed phenomenon in the context of UK-based firms is relevant because the UK is the leading country in terms of internet's contribution to 2010 GDP (8.3%), with an expected percentage of on-line retail in total retail of 23% by 2016 (Dean et al. 2012). Moreover, the UK is one of the leading countries in terms of internet use, measured as number of internet users relative to total population (www.internetworldstats.com). Table 1 below is an overview of the proposed empirical study.

Possible contributions

This study is expected to provide a number of theoretical contributions to the existing IS research. Firstly, this paper will contribute to the small, but growing literature on internet-enabled technologies and the development of customer agility (e.g. Li et al. 2011; Sambamurthy et al. 2003). Secondly, our study will explore in concert the strategic and cognitive dimensions of internet-enabled customer agility. The combination of two theoretical lenses overcomes the limitations of attempting to explain customer agility purely in strategic terms or in cognitive terms. Thirdly, this paper seeks to address the lack of qualitative studies in the field of dynamic capabilities identified by Ambrosini and Bowman (2009) and provide concrete examples of dynamic capabilities and their importance for organizational evolution.

In terms of practical contributions, we anticipate our study to provide valuable insights to e-business managers about the ways in which internet-enabled processes and tools can be deployed in order to improve firm reputation, trustworthiness and competitiveness in a globally connected business environment.

Table 1. Research Overview

Phenomenon of Interest	Theoretical Lenses		Proposed Research Methodology and Setting
Internet-enabled customer agility: the co-opting of customers in the organizational process of sensing and seizing market opportunities, and taking customer-oriented competitive action by reshaping firm capabilities via blogs, forums, wikis, virtual communities, social media etc (Brown and Eisenhardt 1997; D'Aveni 1994; Sambamurthy et al. 2003).	*Dynamic Capabilities:* the firm's ability to strategically develop assets and processes in order to address fast-changing environments (Ambrosini and Bowman 2009; Eisenhardt and Martin 2000; Helfat et al. 2007; Teece 2007; Teece et al. 1997).	*Heuristics*: Key constructs - representativeness, availability, affect (Kahneman 2011). *Associated biases*: Key constructs - illusions of validity and skill, overconfidence, generalization errors, hubris, theory induced blindness (Kahneman 2011). *Framing*: Key constructs – frame transformation, cognitive reorganization (Goffman 1974; Balogun and Johnson 2004; Fiske and Taylor 1991;).	Multiple case study approach (Yin 1994) in the context of UK-based digitally-driven firms (Dean et al. 2012).

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