Theoretical Elaboration Of It Enablement Model In The Era Of Customer And Community Digital Innovation

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THEORETICAL ELABORATION OF IT ENABLEMENT MODEL IN THE ERA OF CUSTOMER AND COMMUNITY DIGITAL INNOVATION

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Abstract

Research on information systems has demonstrated the strategic potential of information technology (IT) through the logic of IT enablement: synergistic relationship between IT assets with organizational resources ensuing IT-enabled resources capable of influencing competitive firm performance. However, this enablement view has largely focused on IT assets and organizational resources within the boundaries of the firm or its close partners. Increasingly, users and communities far outside the boundaries of the firm create strategic value for firms from varied co-creation experiences with interactive IT. This emergence of new content, uses, and behaviors constitutes a generative capacity, or generativity. Generativity has strategic potential of an IT enabled resource capable of positively affecting a firm’s performance under certain facilitating conditions of identification and emotional responding. This elaboration of IT enablement model by generativity and facilitating conditions is important as it develops the understanding how interactive IT and user and community innovation logic are related to the business value of IT.

Keywords: Business Value of Social Media, Generativity, Customer Innovation, Community Innovation.
1 Introduction

The business value of information technology (IT) has long excited and troubled the scholars of information systems. Recently, Nevo and Wade (2010, 2011) provided theoretically argued and empirically supported model of how IT assets render sustainable competitive advantage through the concepts of emergent capabilities, synergy, and strategic IT enabled resource. Grounded in resource-based view (RBV) and systems theory, the core logic argues that strategic potential of IT enabled resource is attained through emergent capabilities of synergistic relationships of organizational capabilities and widely available and commodity like IT assets. The emergent capabilities can realize their potential of IT-enabled resource under facilitating conditions of compatibility and integration effort. The IT-enabled resource has properties of value, rarity, inimitability, and nonsubstitutability, positively impacting the firm’s competitive advantage. The theory assumes that the emergent capabilities are controlled by the firm, the strategic goals are known by value creators, and adequate motivations are present (Nevo & Wade, 2010).

There is increasing recognition that the value creation and firm performance differentials no longer are limited to what happens within the firm’s immediate environment or even with its close partners. Rather, value creation depends on how various external constituents combine their emotional motivational resources with information technology (IT) assets to derive value not only from what they do with the firm’s products and services but to make statements about their identity and social relationships and in the process create new content, behavior, and even demand for the firm’s products and services (Di Gangi et al, 2010; Yoo et al 2012; Tilson et al, 2010). When social media and other interactive IT assets enable users and communities to engage, learn, and innovate – in other words, create value - a capacity of generativity emerges. The existing IT enablement model does not address generativity, a key logic behind user and community innovation (Baldwin & von Hippel 2012), and the mechanisms through which it can attain strategic potential as a valuable IT-enabled resource. The purpose of the paper is to fill this gap.

Generativity refers to the capacity of a user or a community of users to generate or produce new content, behavior, or other resources without any direct help of the owners of original resources (Tilson et al, 2010). Generativity is associated with the use of interactive IT assets such as Facebook, Twitter, YouTube and wikis that support a wide range of action potential and activity streams. When IT assets are combined with the knowledge and skills of diverse users and active communities, generativity can emerge often in unforeseen and serendipitous ways. For example, when McDonald’s launched McRib, a new sandwich, in 2010, it decided to use social media that helped to develop a loyal fan base. Without any direction from McDonald’s, one of the “super fans” had developed Facebook fan pages for McRib, another had written a book chapter on McRib, and a third one had developed a Google Map to McDonald’s restaurants that served this limited-time-offer sandwich (Kiron et al, 2012). The generativity of McDonalds fans had positive business impacts on the firm.

Generativity is not necessarily beneficial for the firm. Generativity can involve negativity and undermine the firm’s business goals. Generativity cannot be assumed to be automatically in the interest of the firm. Kietzmann et al (2011) describe how the customer service failure of United Airlines was captured on YouTube video and quickly exposed to a global network of other customers or potential customers. The interactive IT asset coupled with the customer resource depicted United Airlines in a very unfavorable light. This combined resource was then further recombined and reconfigured with community resources of frustrating experiences of other airline customers. The generativity of interactive IT asset and customer and community resources created a major PR crisis for the firm.

In this paper, we understand generativity to emerge from actions or activities of a user or a community of users of interactive IT assets. Generativity becomes ever more relevant and important as information technology assets shift from the paradigm of algorithms to interactions. Wegner (1997,
p.85) defined interactive systems as “grounded in an external reality both more demanding and richer in behavior than the rule-based world of noninteractive algorithms”. How generativity of the user or the users of these interactive IT assets can be turned to a valuable IT enabled resource that can bring business benefits to a firm has not been fully explained in the current literature on generativity (e.g., Avital & Te’eni, 2009; van Osch & Avital 2010; Tilson et al, 2010; Yoo et al, 2012).

Following Nevo & Wade (2010, p. 164), who defined IT assets as “widely available, off-the-shelf or commodity-like information technologies that are used to process, store, and disseminate information”, in this paper, we define interactive IT assets as open, widely available, commodity-like platforms, on which services with varied levels of complexity, sophistication and integration with other platforms and services are built. Such platforms afford openness and flexibility in bringing separate user experiences together; enable social connectivity and monitoring of this connectivity; and allow for broad transparency and traceability of user content. Such interactive IT assets are an important focus for research as they lower the design and coordination costs for customer and community digital innovation (Baldwin and von Hippel, 2012). Yet, the link between interactive IT assets, generativity of customer and community innovation, and firm-level benefits is far from understood. This paper argues that even though interactive IT assets cannot be fully controlled by the firm, the emergence of generativity from interactive IT and customer and community resources can be directed toward the goals of the firm with certain facilitating conditions. The ensuing positive generativity can have the properties of IT-enabled resource and be used to attain competitive advantage. This path provides a theoretical elaboration to the IT Enablement Theory.

Next, we briefly review the IT Enablement Theory. We then discuss how generativity can create strategic business potential. We offer examples drawn from existing case studies and other anecdotal examples to illustrate how interactive IT assets, such as different social media tools and platforms have been utilized by different companies to achieve that. Then, we trace the facilitating conditions that can turn generativity to an IT and customer/community enabled resource with strategic potential. We conclude by outlining theoretical propositions to be tested in future empirical studies.

2 IT Enablement Theory

The IT enablement theory centers on the concept of IT-enabled resource and builds on the resource based view of the firm (Wade & Hulland 2004; Barney, 1991) complemented by the systems theory (e.g., Ackoff, 1971; Churchman, 1971). According to the IT Enablement theory (Nevo & Wade, 2010), IT-enabled resource is a system comprised of IT assets and organizational resources in a synergistic relationship with emergent capabilities. Such a synergistic relationship can take many different forms such as compensatory (a change in the level of one resource is offset by a change in the level of another) and enabling (one resource magnifies the impact of another resource) (Wade & Hulland, 2004). The synergistic relationship advances emergent capabilities, that are neither possessed by IT assets nor organizational resources in isolation nor at the level that can be achieved by either alone. When the emergent capabilities present positive strategic potential for the firm, they are depicted as synergy. The emergent capabilities, or synergy, may not be realized without the presence of enabling conditions: compatibility and integration between IT assets and organizational resources. Compatibility allows the IT assets and organizational resources to interact without friction. Integration involves structures and processes that facilitate the compatibility or make it more effective and efficient (Nevo and Wade, 2010, 2011). The ensuing IT-enabled resource that realizes synergy has properties of value, rarity, inimitability, and non-substitutability. These properties in turn impact sustainable competitive advantage (Nevo & Wade, 2010).

The theory is an important contribution as it provides coherent logic of the mechanisms by which IT assets contribute to strategic business performance. However, much of the focus of the theory has been on IT assets and organizational resources controlled by the firm or its close partners. The IT Enablement Theory emphasizes emerging synergy that result from the firm’s orchestrated organizational resources and its controlled IT assets (Nevo & Wade 2010, 2011).
More broadly, the research on resource-based view and IT assets generally limit the view to how firm creates value with its organizational resources and IT assets or expands the view to only consider the close business partners or customers. For example, a recent study by Roberts and Grover (2012) examined customer agility and competitive responses but here again the focus was on the synergy that was produced by an IT enabled system comprised of the firm’s Web-based customer infrastructure and the firm’s organizational resource of analytical ability. Assets and resources outside the control of the firm or beyond its close partners were not being considered.

Where value co-creation is examined in a broader network such as the leading mobile computing platform (e.g., Han et al, 2012), the focus is on the value capture among actors versus rivals rather than uncovering the underlying mechanisms of IT enabled asset, generativity, IT-enabled resource, and the firm’s business value. The studies that examine two-sided markets (e.g., Boudreau 2010; 2012) or innovation-based platforms (e.g., West & O’Mahony 2008; Eaton et al 2011) examine the strategic potential of IT-enabled supplier or user innovations, but do not tie the logic of the IT Enablement theory that is grounded in resource based view and systems theory.

3 Generativity and Strategic Business Potential

Generativity focuses on how varied and distributed external actors (customers, suppliers, community members and so on) often without any prior relationship with each other and to the focal firm produce ideas, solutions and other content that in turn prompts further innovation (Tilson et al 2010). Zittrain (2006, p. 1980) refers to generativity as “a technology’s overall capacity to produce unprompted change driven by large, varied, and uncoordinated audiences.” Van Osch and Avital (2010) associate generativity with processes in collectives with shared interests or goals that produce new configurations and possibilities that lead to further innovation or produce overall value.

An example of a commodity like IT asset with generative capacity is a digital tablet. The IT asset when combined with specialized customer knowledge, and organizational resources (newswire service) is generative as it allows nearly unbounded opportunities for users to produce new innovations that recombine the service, modify it, and distribute to other diverse actors who further recombine and distribute it (Yoo et al, 2012). Generative capacity of IT enabled resource such as the digital tablet comes from perpetuating acts that take place outside the direct control of the firm with the newswire service. Often generativity gets masked behind the abstract concepts of “customer knowledge” or “user or community generated content.”

Social networking platforms are associated with generativity (see Table 1 for examples). Social networking platforms are IT assets that enable interactivity, content creation, and activation of connections to other users as well as monitoring of those connections (Kane et al, 2011). In Table 1, we identify several examples from the literature or business press of how interactive IT assets and community resources emerged into generativity that then had strategic business potential.
Ford Motor Company gave one hundred people a car for six months and asked the people to share their experiences online through various social media. The experiences rejuvenated a whole host of other customer and community innovative experiences. The customer and community innovation increased the firm brand awareness and was associated with 50,000 sales leads and 35,000 test drives. Ducati virtual communities were found to play an influencing role in convincing others to try (and buy) a Ducati motorcycle (Bagozzi et al, 2011) when the fans, or “tribe members” as they are called, spread the word about the brand. Ducati also received front-page media coverage. The coverage was not obtained by official Ducati public relations but by a journalist who was a member of the Ducati Tribe. Di Gangi et al (2011) describe Dell IdeaStorm where customers were involved in product innovation processes, often building on the ideas of others.

In the Quality Hunters Season 2 (QH2) campaign, Finnair hired seven “Quality Hunters” for less than two months to experience and blog about “the entire service path of a [air] traveller, from planning to boarding and to the flight” with Finnair and Helsinki Airport. The Quality Hunters blogs were combined with a variety of other social media and user and community experiences into a generative online community. The Quality Hunter’s online community generated some 260 new service ideas, some of which were later implemented by the firm.

The travel industry along the airlines has been one of the most active users of social media particularly in the times of crisis. For example, during the Iceland’s Volcano eruption in 2010, airlines used social media to allow altruistic customers to help those in distress (Jarvenpaa & Tuunainen, 2012). Generativity can emerge when an IT asset such as social media platform activates a large-scale community around a cause or goal where interaction is based on indirect or generalized helping where one’s giving is not reciprocated directly (Faraj & Johnson 2011).

The above examples describe positive generativity in company driven campaigns and initiatives – i.e., positive outcomes that the companies have hoped for. Ducati virtual communities increased loyalty, brand awareness, and new customer acquisition. Similarly Ford Fiesta movement was associated with brand awareness, sales leads, and new customer acquisition. However, there are also numerous examples of negative generativity such as the United Airlines failed customer response. Samsung received an enormous amount of bad publicity from their attempt to coerce Indian online bloggers into

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**Table 1. Examples of generativity, enabling IT assets and resulting strategic business potential**

<table>
<thead>
<tr>
<th>Generativity</th>
<th>Interactive IT Asset(s)</th>
<th>Strategic business potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ducati virtual community (“tribe”)</td>
<td>New products suggestions, fan journalism</td>
<td>Interactive web site</td>
</tr>
<tr>
<td>(Bagozzi et al, 2011)</td>
<td></td>
<td>Customer loyalty, brand awareness, new customer acquisition</td>
</tr>
<tr>
<td>Ford Fiesta Movement Campaign</td>
<td>Customer experiences</td>
<td>Blogs, Twitter, Facebook, YouTube, Flickr</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>Brand awareness, sales leads, new customer acquisition</td>
</tr>
<tr>
<td>Dell IdeaStorm  (Di Gangi et al, 2011)</td>
<td>New product ideas</td>
<td>Interactive web site</td>
</tr>
<tr>
<td>Finnair Quality Hunters Season 2 campaign (Jarvenpaa et al, 2013)</td>
<td>New service ideas</td>
<td>Blogs, Twitter, Facebook, YouTube, Pinterest</td>
</tr>
</tbody>
</table>

acting as Samsung brand ambassadors.\footnote{http://thenextweb.com/insider/2012/09/02/heres-samsung-flew-bloggers-halfway-around-world-threatened-leave/} Also, in the hospitality industry, customers have brought about irrevocable damage to brands with inappropriate and unjustified online negativity (Scott and Orlikowski, 2010). Sometimes generativity has a neutral effect, positive impacts cancelled by negative impacts. For example, in Sweden a popular campaign of allowing each week a different Swede to take over the nation’s official Twitter account to write about their daily life generated a lot positive buzz, until a blogger of the week used the channel to voice her racist opinions, stirring much controversy and some embarrassment.\footnote{http://www.foxnews.com/world/2012/06/12/tweeter-behind-sweden-official-twitter-account-raises-eyebrows-with-comments-on/}

Positive generativity means that the user or the community creates behaviors, use, content, and so on that are in line with the goals of the firm and that link to strategic firm performance and advantage. Generativity creates strategic value for the firm when generativity is linked to the firm’s goals for rent creation, such as, new demand for a firm’s products and services. This is not an easy task as generativity emerges from the community, user, or another external actor and cannot be orchestrated nor planned nor fully envisioned ahead of time. The users’ experiential interactions have elements of unpromptedness and serendipity that leverage a wide range of social media and other interactive IT assets that afford experiential interactions among widely distributed community (Yoo et al, 2012). We next discuss what firms can do to ensure positive generativity.

### 4 Facilitating/Enabling Conditions

We argue that generativity emerges from the relationship between interactive IT assets and user and community resources. Interactive IT assets with open and flexible affordances can enable generativity bringing separate and diverse experiences together, combining them for further ideas, and new sources of innovation that in turn prompt further innovation. However, to render positive generativity, organizational resources need to influence the emergent processes. Prior research has described generativity being produced by open and flexible affordances of IT assets, malleability, procrastinated binding of form and function, recasting of roles and their scope, and unprecedented volume of digital traces (Yoo et al, 2012). Although these may all increase generativity, they do not necessarily ensue that generativity renders strategic value for the focal firm. After all, generativity involves interactive IT assets and user and community resources, none of which are necessarily within the control and boundaries of the firm. At times, generativity and the focal firm’s control are positioned as tradeoffs (West & O’Mahony 2008). Eaton et al (2011) write that, “A firm seeking to extract economic rent …[from an IT enabled resource]… must learn how to support generativity without completely losing control, as generativity without control creates chaos and confusion with no economic value”.

Although the firm is no longer in control of interactive IT assets such as Facebook nor the user or community resources, the firm can influence the emergence processes. For example, in the Ducati “tribe”, many of the most passionate members are employees of the firm, and Finnair’s Quality Hunters were “quasi-employees.” Both internal (or semi-internal) groups of users were important in building a community that enables both generativity and strategic business potential. Therefore, we see the firm’s control (influence) and generativity as coexisting, interdependent, and mutually enabling (Farjoun 2010). Hence, IT Enablement Theory in the era of customer and community digital innovation is not about under what conditions and to what extent should control versus generativity prevail. Rather, IT Enablement Theory is about finding facilitating conditions that can accommodate both generativity and control or influence simultaneously for greater firm performance.

We next turn to two facilitating conditions of users’ identification with the firm and their emotional responding to the aesthetic design elements of the interactive IT assets. When value creation happens
outside the firm in dispersed and often global user or customer communities, these enabling conditions
are also IT enabled, and promote generativity as well as allow some level of control for the firm. There
may be other facilitating conditions that transcend generativity and control as well.

4.1 Identification with the firm

Generativity (Zittrain, 2006, p. 1980) emphasizes emergent action by “large, varied, and
uncoordinated audiences.” Highly heterogeneous audiences vary widely in their expectations, values,
and skill sets. For the firm to benefit from generativity that arises from broad audiences, the firm
needs to find a way to shape the emergent processes to be coherent with the firm’s goals and values
(Nambisan & Baron 2010). The co-creators need to understand their roles in the co-creation process.

Firm identification has been repeatedly found to be pivotal in firm-hosted co-creation (e.g., Di Gangi
et al, 2010; Dholakia et al, 2004; Nambisan & Baron, 2010; Bagozzi et al, 2012). In Ducati
communities (Bagozzi et al, 2011), three different foci in identification proved to have material
impact: the self as an individual entity (individualistic), self as part of a social group (collective), and
the self as a relationship partner (relational). Individualistic, relational, and collective are
conceptualized as identity orientation with their differentiated social motivation, knowledge, and
frame of reference for evaluation. Bagozzi et al (2012, p. 74) elaborated on the identities that linked
organizations and their co-creating consumers:

“In acting out membership in their groups, members not only strengthened their social identities with
these groups but promoted the product, brand, and company, which serve as media of social identity
fulfillment. These social identities were found to affect personal identities fulfilled through
connections to the brand name and company image. Action tendencies and behaviors that individual
consumers take to benefit the firm were directly linked to these personal identities and indirectly
influenced by the strength of social identities with the small group of aficionados and virtual brand
communities.”

Identification can be facilitated through socialization (e.g., Bauer et al, 2007; Ashforth & Saks, 1996).
In socialization, a member “gain(s) an appreciation of specific organizational values, develop the
abilities necessary to function within a specific organization, gain an understanding of what the
organization expects of them, and gain the knowledge necessary to interact with employees and other
customers” (Kelley et al, 1990, p. 318). Socialization aims to integrate the member to the firm. In
essence, socialization transforms the users or community from firm outsiders to firm insiders (Feng et
al, 2011; Bauer et al, 2007).

In its Rethink Quality initiative (of which the Quality Hunters Season 2 campaign was one part)
Finnair used a variety of socialization tactics, some of which could be argued to perform in
contradictory ways and satisfy conflicting expectations. It used institutionalized socialization tactics
whereby its own employees wrote blogs that conveyed Finnair’s values and goals in a uniform
fashion. It also hired temporary employees, so called Quality Hunters and gave them much freedom to
blog and interact with community members. In addition to these institutional forms of socialization,
Finnair promoted peer-to-peer socialization whereby heterogeneous Finnair customers and other
community members were providing their individualized voices helping each other (Jarvenpaa &
Tuunanen, 2012). Different interactive IT assets were used to enable these seemingly contradictory
socialization tactics. Collectively, they helped to build members’ multi-dimensional identification with
the firm.

Proposition 1: Greater user and community identification with the firm positively affects the extent to
which generativity contributes to strategic potential of the firm
4.2 Emotional responding

Huy and Shipilov (2012) found emotional capital (defined as the aggregate feelings of goodwill toward a company and the way it operates) to play an important role in the context of social media networking. When interactive IT assets involve co-creation by customers and potential customers and their broader communities, our interest lies in the emotional responding by these external resources and how the emotional capital in terms of feelings of authenticity, pride, attachment and fun (Huy & Shipilov, 2012) creates strategic potential of interactive IT assets through generativity. Cook et al (2002) link customers’ emotional responses to service and service design with customer loyalty and potential of economic benefits for the firm. In a study on virtual servicescapes, Vilnai-Yavetz and Rafaeli (2006) found positive customer emotion (feelings of pleasantness) to have an impact on customer satisfaction.

Originally in the context of physical product design, Norman and Ortony (2003) distinguished between three fundamentally different kinds of emotional user reactions to the product: visceral, behavioral and reflective. While users’ emotional reactions might be positive or negative, and they might or might not be anticipated or intended by the designer (Norman & Ortony, 2003), our focus here is on positive reactions. We argue that emotional responding – visceral, behavioral and reflective - can be evoked with the aesthetic design elements of interactive IT assets that can positively influence the generativity to be in coherence with the firm’s goals. These reactions are not limited to digital products but can include a wide variety of services or other resources. Positive generativity is expected to contribute to firm performance.

4.2.1 Visceral responding

Visceral design is related to the appearance – or aesthetics – of a product or service. In blogs, for instance, this relates especially to the use of aesthetically interesting and pleasing pictures. For example, in Finnair’s Quality Hunters Season 2 campaign, the Quality Hunters were specifically instructed to include “inspirational pictures” to their blog postings. The pictures were intended to elicit immediate positive or negative reactions.

Visceral responses of users involve an automatic evaluation of the perceptual properties of objects, and a quick classification of them as “good” or “bad”. These reactions are produced by “pattern recognition mechanisms driven solely by the here-and-now of perceivable features” (Norman & Ortony, 2003, p.3). Feelings, such as satisfaction and pleasure have their origins in emotions in visceral level (Norman & Ortony, 2003).

YouTube videos of Finnair’s flight attendants’ flash mobs went quickly viral, and in Finnair’s QH2 blogs, the “good” pictures prompted interest among the community, encouraging readership as well as commenting and giving feedback on others’ comments, in other words, generativity that was consistent with the firm’s goals of exposing members whom may have never heard of Finnair to become aware of the firm and its values.

Similarly, series of Procter & Gamble’s Old Spice commercials and YouTube response videos starring former NFL wide receiver Isaiah Mustafa as the Old Spice Guy exemplify how positive visceral responding to an online marketing campaign had an impact on firm performance. The strategic potential of interactive asset was realized through viral marketing targeted toward a new group of potential customers. The company released in one week 180 personalized videos, several of which were responses to people’s questions and comments received via Twitter, Facebook, Reddit and other social network channels. These videos recorded nearly 6 million views and 22,500 user comments, helping in renewing the stagnating Old Spice brand.
4.2.2 Behavioral responding

Behavioral design relates to the function and use of a product, including the general concepts of usability. Users’ behavioral responses are connected to predictions of and expectations about the product or the service in the near future. Because the associated skills and routines are acquired through learning, they also involve past experience and expectations of future states and events (Norman & Ortony, 2003). Emotions have been found to have a direct impact on service customers’ behavior, particularly the emotion of dissatisfaction (Zeelenberg & Pieters, 2004). Empowerment is particularly important as it can motivate a current or future customer to make the service or product his or her own. In essence, the customer becomes a designer of the firms’ product or service. Not only does the firm gain a more loyal customer but can leverage a new source of innovation that can lead to competitive advantage (Fuchs & Schreier, 2011).

In Finnair’s QH2 community, for example, the users engaged in discussions about air travel in general and with Finnair in particular. The Quality Hunters, as quasi-employees and socialization agents of Finnair, led the discussions and encouraged generating new service ideas. Through this, the community members – even those who had never flown with Finnair – improved their understanding of the firm and its activities and could even gain a sense of perceived control that promoted them taking varied roles moving them closer in behaviors to Finnair employees or close allies such as the PR firm or the airport service provider.

Another example is provided by Converse that persuaded large numbers of its most passionate customers to create their own video advertisements for the product. The Converse Gallery site featured customer-made films by Converse fans who were asked to express what Converse shoes mean to them, and attracted hundreds of submissions and millions of visitors. The company empowered the fans first by allowing them to design their shoes and then allowing them and other customers to buy these customer-designed shoes.

4.2.3 Reflective responding

Aesthetic design elements can also elicit reflective responses that trigger strategic decisions on the behalf of the firm. Reflection is about people’s self-examination of their own actions, understanding, and monitoring of progress for future action. This is the home of self image, of meta-processing, and where pride of ownership, quality, and brand play major roles (Norman & Ortony, 2003). Here is where people can show off their true interests as well as exhibit foresight.

User’s reflective response is influenced by experience and culture as well as by one’s social group (Norman & Ortony, 2003). The perception of what a product or service says about its owner or user defines the personal and social significance attached to the design (Crilly et al., 2004). Hence, reflective responding is not about immediate reactions, as in visceral responding, or related (as such) to past experience and expectations, as in behavioral responding. Rather, it is more strategic level response in the sense that it relates to some end goal.

For example, when Finnair’s QH2 campaign was officially over and the Quality Hunters no longer in Finnair’s employment, the most active community members wanted to keep the community alive and also offered ideas on how to keep the community going with the Quality Hunters. The discussions moved from the QH2 web site more to Twitter, and this committed community kept on offering feedback on a broad spectrum of travel related issues on daily basis. Hence, it was the community rather than the firm that made a strategic decision to continue the community.

In the Ducati virtual community, the sense of pride of ownership is a central reflective response by the members of the community, displayed in their resisting negative feedback, enforcing positive word of mouth and even attempting to persuade non-owners of Ducati motorcycles to become one (Bagozzi, 2012). The community members took it upon themselves to turn Ducati noncustomers to customers.
Proposition 2: The more aesthetic design elements elicit visceral, behavioral, and reflective responding, the greater the extent to which generativity contributes to the strategic potential of the firm.

Thus far, we have developed the path from interactive IT assets to enabling conditions to generativity rendering strategic potential of IT-enabled resource (see Figure 1). By strategic potential of IT enabled resource we refer to generativity that is rendered positive in view of the firm’s goals and economic logic. As an IT and customer/community enabled resource with strategic potential, generativity increases the possibility of repertoire of capabilities that are useful to the firm in terms of value property, the rarity property, the inimitability property, and nonsubstitutability property. The linkage from IT and customer/community enabled resource with strategic potential (i.e., positive generativity) to competitive advantage follows the path and arguments outlined by Nevo and Wade (2010).

Figure 1. The conceptual model

5 Conclusion

Interactive IT assets have become an integral part of how customers and communities co-create value as they search, select, adapt, modify and recombine digital products and services. Value creation involves widely available, open, and easily malleable IT assets with user and community resources. Such value creation is increasingly linked to generativity. Generativity refers to “a technology’s overall capacity to produce unprompted change driven by large, varied, and uncoordinated audiences” (Zittrain 2006, p. 1980).

This paper enhances our understanding of how interactive IT and user and community innovation logics are related to the business value of IT. We have conceptualized a path of how interactive IT such as social media coupled with user and community innovation logic contributes to firm performance through generativity. This path suggests that when interactive IT assets have properties of open and flexible affordances and are combined with user and community resources, generativity emerges. This generativity can be turned to positive generativity if the firm is able to influence the emergence process. This influence can take the routes of identification and emotional responding. Socialization activities that facilitate identification with the firm can involve social agents as in the case of Finnair Quality Hunters who where temporary employees of Finnair, direct company voice as Finnair employee blogs or, indirect company voice through super fans such as in McDonald’s McRib or Ducati motorcycles. Emotional responding involves the use of aesthetics to elicit visceral, behavioral, or reflective responding. Following the logic of IT Enablement Model (Nevo and Wade 2010), positive generativity can contribute to resources that provide firm with value, rarity, inimitability, and nonsubstitututability and hence competitive advantage.
To make our arguments we have heavily relied on the IT Enablement model (Nevo and Wade 2010) as well as the literature on IT enabled generativity (e.g., Tilson et al, 2010). We have also drawn from existing case studies and other anecdotal examples to illustrate our points. We advanced two facilitating conditions although we do not rule out the existence of other enabling conditions. Clearly the theoretical elaboration we have provided requires much further thought as well as empirical support. We have also not discussed the challenges that the firms face in utilizing interactive IT assets in terms of integration and interoperability that supports positive generativity or, interoperability that reduces the potential generativity.

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