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# How Online Social Networks Create Value for Organizations: A Resource-Based Perspective

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## ABSTRACT

Online Social Network (OSN) is an emerging communication technology which has increasingly been used. Today organizations are paying more attention to the importance of these networks and are trying to create value with these emerging technologies. Current literature focuses on the information and network implications of these networks at the individual and group levels, leaving the organizational level impact understudied. This study examines how these networks create value for organizations. We propose a model based on Sambamurthy et al. (2003) framework conceptualizing the OSN and explaining how OSN capabilities bring about customer agility through digital options of communication facilitation.

## Keywords

Business value of IS, Online social network, Online community, Resource-based view.

## INTRODUCTION

Information technology is changing the way we are all communicating with each other and has a profound impact on many aspects of our social and organizational life (Agarwal & Lucas 2005). Online social networking is one of the newest and fastest growing communication methods used (N. Barnes & F. Barnes 2010). Although the different types of online communities and their informational and individual aspects have been studied, little is known specifically about Online Social Networks (OSN) at the organizational level. The research question driving this study is *how can online social networks create value for organizations?*

In this study, we define OSN as *a network of online identities through which people could connect, communicate and track each other*. This definition has the advantage of including different elements used in prior work as well as being platform-free with least specific technological features in it and focuses on the network nature of the OSNs, rather than the technology or service.

## THEORETICAL FRAMEWORK

Online Social Network enables organization to exploit the capabilities of their networks of relationships. It provides organizations with the opportunity to agilely connect and interact with members of their network including staff, customers, and partners. Using OSN, firms can better understand their customers, their needs and their views towards the products. They can engage them in product development, testing, sales and support. In other words, OSN enables firms to explore opportunities in their networks of relationships and exploit them with agility. Positioning agility as the heart of OSN value creation for organizations, we adapted the framework proposed by Sambamurthy et al (2003) that explains, at a macro level, how IT can bring value for organizations through agility. This framework theorizes digital options as they mediate the extent to which IT capabilities influence agility. The next section develops further on our theorization, presented in figure1, and explains each component respectively.

## IT Capabilities

Adopting a resource-based perspective, information systems researchers have identified various IT related resources that serve as potential sources of competitive advantage. As noted by Henderson and Venkatraman (1993), IT capability is not only a set of technological functionalities but also an enterprise-wide capability to leverage technology to differentiate from competition.

Firms' IT capability comprises IT infrastructure, human IT resources, and IT-enabled intangibles (Bharadwaj 2000). The IT infrastructure provides the platform and functionalities to launch innovative IT applications; the human IT resources enable firms to conceive of and implement such applications. To that effect, Mata et al. (1995) argue that managerial IT skills are rare and firm specific and therefore likely to serve as sources of sustained competitive advantage. Lastly, a focus on IT-enabled intangibles enable firms to leverage or exploit pre-existing organizational intangibles such as customer orientation.

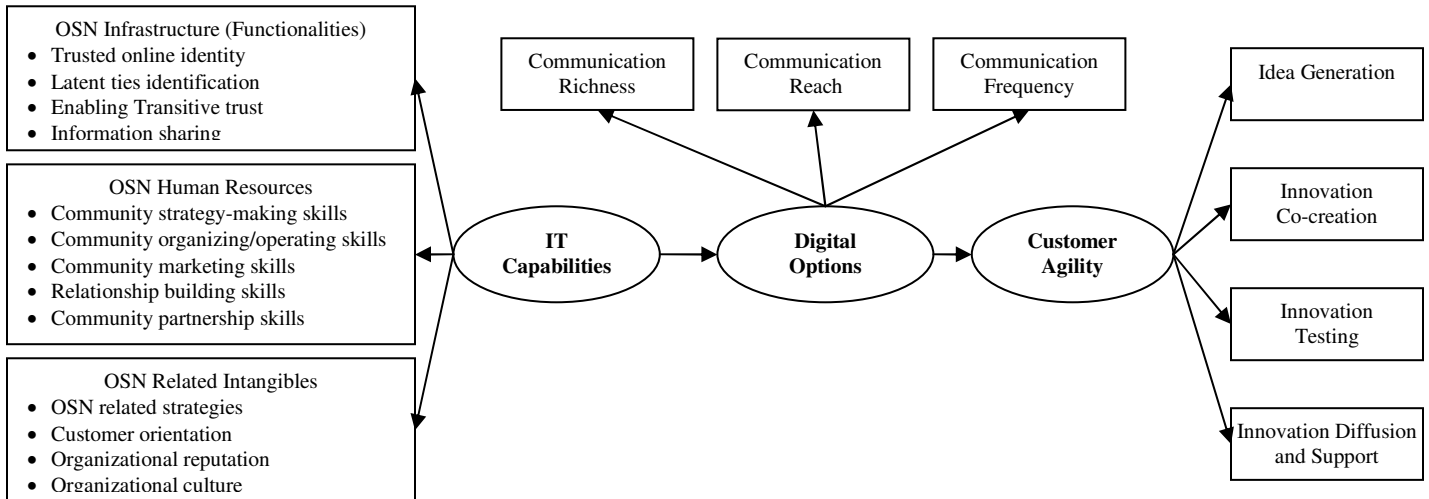


Figure 1. Proposed model for OSN value creation

*OSN Infrastructures (Functionalities)*

Since IT systems can be purchased or duplicated fairly easily by competitors, it is argued that physical IT resources are unlikely to serve as sources of competitive advantage (Mata et al. 1995). However IT infrastructure is seen as an essential element alongside other IT resources to produce resource complementarities for achieving competitive advantages (Clemons & Row 1991).

IT infrastructure is defined as functionalities, rather than physical components, brought to organizations by online social networks. Such function-based approach is consistent with many previous IS studies (Doll & Torkzadeh 1998). These functionalities may vary from one OSN to another and they could bring businesses different levels of capabilities and value based on how they are appropriated by people and organization (Orlikowski 1992). Some essential OSN functionalities are recognized and discussed as the following.

**Trusted online identity:** refers to trustworthiness of the online identities in OSNs. Users' online identities are very valuable properties of the OSNs, increasing the importance of their reliability. The more privacy people feel on the OSN, the more trustworthy information they provide from themselves (S. B. Barnes 2006). Comparing the trustworthiness of online identities on Facebook and Myspace, Dwyer et al. (2007) argues that the credibility of users' personal information on OSN is directly related to the level of trust. Such difference in trust of two OSNs could be referred to the tighter security settings of Facebook which enable users to limit the information flows and accessibility of their information to others.

**Latent ties identification:** Three types of ties are identifiable in the social network literature including strong ties, weak ties, and latent ties. The first two refers to the strength of the relationship between two members, but the third one refers to the ties for which a connection is available technically but has not yet been activated by social interaction. Latent ties have the potential to be converted to weak ties and then to strong ties (Haythornthwaite 2002). This kind of ties is shaped by network definition features which enable people to define their social network and go through their friends to get new potential friends that may be close enough in their desires to connect and interact with them and convert them to weak or strong ties. Also, latent ties could be identified through the groups and discussion boards (Haythornthwaite 2005).

**Enabling Transitive Trust:** Transitivity of trust means that if A trusts B and B trusts C, then A will trust C. Although trust is not completely transitive, there is a notion that trust can be passed through people (Golbeck & Hendler 2006). Since transitive trust is imported from other trustees rather than built cognitively based on personal interactions, it is close to the notion of swift trust which is more imported than developed cognitively (Jarvenpaa & Leidner 1998). OSNs enable the transitivity of trust through ties by making social ties visible and measurable via network definition features (Boyd & Ellison

2007). Golbeck and Hendler (2006) accounted for variety of ways in which OSNs operationalize the concept of trust and facilitate its transition like using friend-rating and testimonial features.

**Information Sharing:** While information is an essential component of any decision, social ties (active and latent ones) are rich sources of information. Mayer (2009) believes that the transmission of information is the most important mechanism through which social networks would affect people's decision and behavior. Individuals can share the information actively or obtain it through the observation of others. He also asserts that information sharing can affect the behavior of people by either making them aware of additional options, or getting them more informed on existing options. Boyd and Ellison (2007) have counted a number of information sharing features of OSNs such as photo-sharing, video sharing, blogging and instant messaging facilitating transmission of information through the network connections. Status update, feed update, polls and events are among other features supporting information sharing function.

#### *OSN Human Resources*

IT human resources include both aspects of technical IT skills and the managerial IT skills (Bharadwaj 2000). Technical and managerial IT skills typically evolve over long periods of time through the accumulation of experience (R. L. Katz 1974). Furthermore, managerial IT skills are often tacit, dependent on other interpersonal relationships which may take years to develop, and highly local or organization specific (Sambamurthy & Zmud 1997). Viewed from a resource-based perspective, human IT resources are difficult to acquire and complex to imitate, thereby serving as sources of competitive advantage (Barney 1991). In fact the wide difference in competitive organizational and economic benefits that companies gain from IT has been attributed largely to their managerial IT resources, rather than technical IT human resources (Mata et al. 1995).

Armstrong and Hagel (1995) have accounted for a variety of OSN related human skills required for successful community development and management. Strategy-making skills are required to resolve many strategic issues related to target members and value creation strategies. Organizing/operating skills are needed for executive moderators who manage the community editors and main contributors in their access rights and day-to-day interaction. Community marketing skills are among the essential OSN human skills which are required for community merchandisers who plan for the value and content that should be produced for different user groups, new ways of introducing the community and attracting new members, and boosting usage and interaction. Relationship building skills are also considered necessary for community editors and main community contributors which could be among employees and motivated community members. Furthermore, partnership alliances facilitate the formation and value creation of online communities. Community owners should identify the potential partner communities and how to share the community members and develop content.

#### *OSN Related Intangibles*

IT is a resource that generates competitive value only when it leverages or enables pre-existing firm resources and skills (Clemons & Row 1991). Resource-based view has recognized the value of intangible organizational resources in complementarities with IT resources. Several key organizational intangibles such as corporate culture, corporate reputation, and environmental orientation have been recognized as crucial drivers of higher performance (Barney 1991; Bharadwaj 2000). Firm-specific intangibles generally tend to be tacit, unique, and deeply embedded in the organization's social context and history. IT capabilities not only influence these organizational intangibles, but also are influenced by them (Bharadwaj 2000). Market responsiveness, customer service and product quality are among the intangibles supposed to be improved by IT systems (Brynjolfsson & Hitt 1997).

As an OSN related intangible, firm-level strategies towards OSN would guide not only value creation but also value appropriation and, more importantly, would reconcile the conditions or the requirements for each (Nambisan 2002). Customer orientation is another vital organizational intangible (Bharadwaj 2000) referring to how organization commits to know its customers and satisfy their needs. Organizational reputation and brand are also argued to have profound effects on community formation and could extensively accelerate the development of firm's online community (Armstrong & Hagel 1995). Furthermore, organizational culture would determine how well the organizational members are communicative, technology literate, and respectful to customers.

#### **Digital Options**

Digital options are defined as the organizational capabilities enabled by IT and mediate its performance effects (Sambamurthy et al. 2003). As OSN is a community of relationships, we focus on the communication aspect (Armstrong & Hagel 1995). We define OSN's digital options as communication facilitation in terms of aspects of communication reach, richness and frequency.

#### *Communication Richness*

Richness of the communication is a widely investigated characteristic of communication which is looked at from variety of points of view. On one hand, there is a positivist view which defines richness as an invariant and intrinsic property of the channel. In this view, communication richness is defined as the amount of information transferred through the change within a time interval (Daft et al. 1987). On the other hand, the interpretive approach accounts for the individual's perception towards the communicated message and defines richness as the function of mutual understanding, rather than the channel itself (Ngwenyama & A. S. Lee 1997). From this point of view, richness of communication could vary based on social influences, previous experiences and perceptions of the channel, organization context and the topic (Carlson & Zmud 1999). In this study, we adopt an interpretive approach to communication richness to better account for the social implications of richness in OSN environments.

Lack of contextual information is one of the most important factors affecting the richness of communication (Carlson & Zmud 1999). While contextualization would improve the shared understanding of people with different perspectives, it would deter richness when people are of close perspectives (A. Katz & Te'eni 2007). Since OSN shapes around the concept of homophily (Granovetter 1973), people usually have close perspectives with others who are in their network of connections; hence fewer contextualization efforts are needed and communication is of higher richness.

#### *Communication Reach*

The reach aspect of communication is addressed mainly in the marketing and communication field. Communication reach is viewed in two different ways. Firstly, it is defined as a characteristic of the media itself that refers to the population of the audience the media have (Gunther & Liebhart 2006). Secondly, it is seen as an attribute of the audience or participant rather than the channel itself. From this point of view, hard-to-reach label is applied to audience segments based on their socioeconomic status, their ethnicity, or their level of literacy (Freimuth & Mettger 1990). We propose a third perspective conceptualizing reach as a characteristic of the communication interaction, rather than either the channel or the audience. In this perspective, reach of a communication interaction is the degree to which the interaction attends to potential audiences. Consistent with Vogt et al. (1998), this view emphasizes on the importance of reaching potential participants in communication performance.

OSN is assumed to have extant effects on finding and interacting potential audience especially prospective customers (Ma et al. 2008), first-time visitors (Vogt et al. 1998) or someone to ask him some information (Constant et al. 1996). More specifically, reach of the communication could be boosted through the conversion of latent ties to weak and strong ties. De Bruyn and Lilien (2008) argue that trustworthiness of a source converts a weak tie to a strong one and such strong ties are more likely to be used for communication. Also the transitivity of trust is supposed to make potential latent ties vulnerable to be converted to weak and then strong ties with initiating interactions based on the transitive trust.

#### *Communication Frequency*

Communication frequency represents the intensity of communication between partners and is defined as the number of communication interactions between participants (Becerra & Gupta 2003). Higher communication interactions would affect people's expectations towards the communication and its performance (Nambisan 2002). Moreover, higher levels of interactions would enhance communication performance through changing the nature of trust between participants (Becerra & Gupta 2003).

Investigating factors affecting communication frequency, Hoffman (1985) argues that the heterogeneity within group members in terms of race, social types, culture and socioeconomic characteristics would diminish the frequency of interactions within the group. Since OSN is shaped around the concept of homophily (Granovetter 1973), members connecting and communicating through OSN have a high level of homogeneity in terms of social and individual characteristics which should increase the communication frequency. Moreover, trustworthiness of user identity facilitated by OSN considerably influences the level of interactions between people (Nambisan 2002). Furthermore, gated online communities convey the feeling of exclusiveness and provoke greater social interactions among users. Finally, the degree of control that users perceive in a communication environment is also likely to influence the nature of their participation in communication.

*Proposition 1: Having higher OSN capabilities is positively related to higher digital options in terms of communication reach, richness and frequency.*

#### **Customer Agility**

Agility is defined as the ability to detect opportunities for innovation and seize them by assembling requisite assets, knowledge, and relationships with speed and surprise (Overby et al. 2006). It includes three dimensions: customer, operational and partnering agility (Sambamurthy et al. 2003).

There is a body of literature around OSN's contributions for businesses. Firms can benefit from online communities to fulfill different business goals including increased sales, positive word-of-mouth, more effective market segmentation, increased website traffic, stronger brands, higher advertising and transaction fee revenue, better product support and service delivery (Armstrong & Hagel 1995). These benefits relate more to customers than to operations or partners. Generally speaking, technologies for building and enhancing online customer communities for product design, feedback and testing significantly contribute to customer agility, but not others (Sambamurthy et al. 2003). Thus we limit the agility enabled by OSNs to its customer dimensions and discuss how OSNs contribute to customer agility which could result in higher competitive activities.

Customer agility is defined as the ability to get customers on board in exploration and exploitation of innovation opportunities and competitive actions. Here, customer concept is inclusive of both actual and potential ones. Customer agility consists of four dimensions representing different roles of customers in exploring and exploiting the innovations. These four dimensions include idea generation, innovation co-creation, innovation testing, and innovation diffusion and support (Nambisan 2002). We next discuss how different OSN capabilities would support customer agility in these different aspects.

#### *Idea generation*

In the management literature, the most thoroughly documented role of customer as resource has been that of supplying information and wealth to firms (Lengnick-Hall 1996). Marketing literature has also well investigated the role of customers in idea generation and product definition (von Hippel 1978). Customers rarely offer new ideas without being prompted by firm or the community; OSN alleviate the issue by enhancing the reach of the communications, then having feedback of the other customers would prompt people's contributions. Furthermore, the inquiry method used severely limits the customer contributions. Richness of the method and frequency of the interaction would affect the customers' participation in this process. Generally, informal and social methods would result in higher customer contribution in comparison with formal and structured ones (Nambisan 2002).

Three major challenges about using customers as sources of new ideas include establishing ties with customers in a cost-effective manner, providing them with appropriate incentives, and capturing their idea as they mean (Nambisan 2002). OSN communication reach provide firms with the ability to connect their potential and actual customers, and also to encourage customers for contributing to firms by presenting them massive audience. Moreover, richness of communication helps firms better understand their customers' ideas. Online communities make even richer pools of ideas by engaging customers in group discussions rather than one-to-one interactions (Sawhney et al. 2005).

#### *Innovation co-creation*

Firms are increasingly using customers as co-creators of the products to achieve product success and lower levels of risk (Prahalad & Ramaswamy 2004). This role is even more evident in open-source software development in which the customers themselves are the sole creators. Many companies have customer representatives in their product development teams to realize such role of customers. Doing so, a number of management challenges arise including the need for keeping customers well-integrated with the firm and motivated to contribute to the co-creation practices (Nambisan 2002). Social and psychological motives, including status seeking, self-expression, and social esteem, are among the major reasons trigger people for contributing to co-creation practices (Hoyer et al. 2010). OSNs would encourage contributions by facilitating reputation and self-presentation before a large audience through communication reach enhancement.

Compared to the role of customers in idea generation, customer-firm communication interactions tend to be much more intense and frequent during co-creation (Sawhney & Prandelli 2000). The frequent and rich communications help firms enhancing customer integrity and their knowledge about the firm and products. OSN related intangibles and strategies such as strategies for organizing a preliminary group of contributors, reward incentives, competition, recognition, and opinion leadership (Nuttavuthisit 2010; Sawhney et al. 2005) also foster customer contributions to co-creation practices.

#### *Innovation testing*

As primary recipients and users of goods and services, customers are the best source for testing the product or service and feeding back the company. Prototype testing with customers is one of the most essential activities affecting new product success (Cooper 1979). The major concern related to innovation testing is the need for involvement of a diverse set of customers. This is particularly true in the case of product testing, where firms are often forced to make tradeoffs between customer diversity and testing duration while devising their product testing strategy (Dolan & Matthews 1993).

Online communities would essentially facilitate the innovation testing by firm's customer base through enhancing reach to variety of customers including both actual and potential ones (Sawhney et al. 2005). Identification of latent ties enables

organizations to involve not only the direct customers in product testing, but also the potential ones through the mediation of third-party customers. It makes reach of communication more important than richness for the sake of innovation testing.

#### *Innovation diffusion and support*

Customer decision to adopt or buy a new product is often significantly affected by his/her friends. Such social effect is argued to be communicated through the medium of word of mouth. OSNs support diffusion of innovation through online word of mouth in some ways. Reviewer identity disclosure is argued to have profound effect on the effectiveness of customer reviews and innovation diffusion through customers (Forman et al. 2008). Therefore trusted online identities reinforce the effectiveness of new product diffusion by letting people know about the customer identities and make them sure about the originality of the review. Furthermore, active information seeking is more likely to occur from weak ties rather than strong ones (Brown & Reingen 1987). Therefore, OSNs would enhance innovation diffusion by facilitating information seeking behavior of customers through their latent ties enabled by the social network.

Homophily is the essential element shaping social network ties (Granovetter 1973). The similarities between people affect them to have a higher level of interpersonal attraction, trust, and understanding. Therefore, homophilous relationships should encompass stronger ties which would result in customer reviews being more effective (Brown et al. 2007). Moreover, homophily between peer customers contributes to their effectiveness in understanding and appreciating the concerns of product users and their particular usage problems, a critical success factor in product support (Brown & Reingen 1987)

*Proposition2: Having enhanced communications enabled by OSNs is positively related to higher levels of customer agility.*

## **DISCUSSION AND CONCLUSION**

This research aimed at theorizing and explaining “how online social networks create value for organizations”. Drawing on resource-based view, we proposed that OSN capabilities bring about customer agility through facilitating set of digital options comprising of reach, richness and frequency of communications. Compared to the general definition of IT competence used by Sambamurthy et al. (2003), a clearer and more comprehensive conceptualization of IT capability presented by Bharadwaj (2000) is adopted, four essential OSN functionalities are recognized, and some special OSN related human resources and organizational intangibles are identified. This definition is an attempt to address all the OSN related resources required for boosting its performance effects.

Additionally, we considered the communication aspect of IT digital options, rather than its knowledge and process aspects which had been considered by Sambamurthy et al. (2003). Investigating the relationship between digital option aspects and agility dimensions, Overby et al. (2006) argue that knowledge and process aspects of digital options are contributing more to the sensing and responding dimensions of agility, respectively. Here, we propose that the communication aspect of digital options simultaneously facilitates both dimensions of agility including sensing and responding. Based on our arguments, communication reach, richness and frequency influence both sensing capabilities (including idea generation) and responding capabilities (including innovation co-creation and testing).

Looking into the relationship between IT capabilities and digital options, Overby et al. (2006) argue that information systems facilitate reach and richness of knowledge aspect, process aspect, or both. Here, we clarify that information system contribution is not limited to knowledge and process aspects of the organization, and should be extended to communication aspect as well. We also highlighted the reach and frequency aspects of communication which have been mostly neglected through the literature. This case of OSN value creation complements the view towards the digital options brought about by IT capabilities.

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