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ENTERPRISE SOCIAL NETWORKING: OPPORTUNITIES, ADOPTION, AND RISK MITIGATION

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Social networks on the Internet are becoming extremely popular and have begun to change the way we live and work. Many enterprises are assessing the potential of exploiting the commercial opportunities of this technology. Although social networking commercial activities may be the next big productivity booster for firms, some consider such activities to be time wasters and security traps. Therefore, it is useful to develop a framework to consolidate the issues in adopting this technology. This article reviews the opportunities provided by enterprise social networking and proposes using the fit-viability model to evaluate concerns related to the successful implementation of enterprise social networking. We also examine the major potential risks and the mechanisms for their management.

Keywords: *enterprise social networking; fit-viability analysis; risk analysis and mitigation; technology adoption; Web 2.0*

1. INTRODUCTION

Social networks on the Internet are becoming extremely popular and have begun to change the way we live and work (Fraser and Dutta 2008). Some of these networks are business-oriented and can create work-related opportunities. The most notable of these is LinkedIn, which concentrates on business connections and job placements. Since 2007, numerous major corporations have opened pages on Facebook, MySpace, Second Life, LinkedIn and other social networks (Rutledge 2008). Web 2.0 technologies, including wikis, discussion forums, blogs, and microblogs (most notably Twitter), are currently being successfully used by many companies. Facebook is rapidly expanding its advertising and marketing activities with close to a million businesses having a presence there. An International Data Corporation study (Dangson 2009) reported that 57% of U.S. workers already use social media for business purposes at least once per week. The aforementioned social- and business-oriented networks are public. Anyone can join the communities they provide to build a network. Enterprises also have the option of creating in-house, private

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social networks that are restricted to employees and members with whom they are affiliated or have a business relationship (such as retired employees, customers, and suppliers). These networks are referred to as enterprise (or corporate) networks and they offer tools identical to those provided by public social networks, including Web 2.0 collaboration tools.

There are many examples of the successful application of private and public social networks by firms and government offices. For example, Wells Fargo rolled out an enterprise employee portal with significant social networking capabilities for more than 200,000 of its employees (including Wachovia employees) and has reported significant productivity improvements (Tuten 2008). Northrop Grumman has an internal social network that links more than 120,000 employees worldwide. The company has created what it calls “communities of practice”—groups that are focused on a specific topic or technology, ranging from the guts of systems engineering to new hire networking (Terdiman 2007). Almost all Fortune 500 companies (notable examples include IBM, Sears, GE, and Toyota) now have a presence in Second Life and continue to experiment with its different applications (Barnetta 2009). Butow and Taylor (2008) showed how companies are using LinkedIn to gain strategic advantage, and Drury (2008) reported significant growth in online recruitment and marketing strategies since 2007. Companies, such as Coca Cola, IBM, Starbucks, and Dell Computers, have a presence on Facebook. Social networks are also being used extensively by many e-government programs (e.g., New Zealand, Australia), and dozens of governments have islands on Second Life. The Home Office, a ministerial department of the U.K. Civil Service, uses an internal social network called Civil Pages to support its employees in activities, such as cooperative work and knowledge management (Rooksby 2010).

It is clear that organizations are taking advantage of social networking technology of all types and are engaging in an increasing portfolio of applications, which we refer to here as “enterprise social networking.” Firms (including governments) interact with social network sites or employ social networking activities (e.g., blogs) in several ways, with the following constituting the major modes of usage.

1. Participation in public social networks (such as Facebook, LinkedIn, and Second Life) to engage in information sharing, advertising, market research, recruitment, and other activities.
2. Creation of internal social networks for the exclusive use of employees and alumni (e.g., Oracle’s Connect, IBM SocialBlue).
3. Creation of enterprise-owned social networks for customers and business partners (e.g., Starbucks’ mystarbucksidea.com).
4. Enhancement of existing application platforms, such as e-mail and customer relationship management, by including functionalities that are commonly available in social networking systems as blogs, wikis, and discussion forums.
5. Development of tools or services that include capabilities to support social networking applications (e.g., IBM’s Lotus Connections and Microsoft’s SharePoint).

Along with the many social networking success stories documented by enterprises and vendors come reports of difficulties in deployment and other problems, ranging from employee time wasting to the leakage of corporate secrets (Barnes and Barnes 2009). Researchers have called attention to the small number of business-related visitors to many

corporate social networking private sites, and some companies have abandoned them altogether (e.g., Wal-Mart). The business value of these sites has also been questioned (Li and Bernoff 2008), with some seeing them as a waste of both time and money because they fail to relate the amount of time spent with the needs of the workplace (Hoover 2007a). In the face of such doubts, many companies are struggling to come to grips with the full implications of social networking and what it may mean for their business today and tomorrow (Boulton 2008).

The success stories, on the one hand, and the potential risks and limitations, on the other, have led companies to wonder whether enterprise social networking is the “next big thing” or simply a time waster (Steinhart 2009). It has become increasingly clear that such networking has both pitfalls and great potential (Bennett 2007; Skeels and Grudin 2009). It is thus essential that any company with the intention to adopt social networking technology assess the associated opportunities and risks to determine whether it can improve its performance.

The existing research in this arena covers only a few of the opportunities and risks that need to be considered in such assessment. Existing studies are primarily concerned with the individual tools available, particularly wikis and blogs, or report case studies in individual companies or functional areas. There has been little comprehensive coverage of the opportunities, risks, and adoption considerations and issues involved in enterprise social networking and, thus, this article attempts to fill the gap. In particular, this article identifies major opportunities and potential risks associated with enterprise social networking and adopts the fit-viability model to provide guidelines for companies that are interested in adopting this new technology.

The remainder of the article is divided into four sections: first, a description of the opportunities associated with enterprise social networking is provided; second, further exploration of those opportunities and the proposed fit-viability framework for research in this area is outlined; third, the potential risks of enterprise social network and suggestions for their mitigation are discussed; and fourth, new research directions are proposed.

2. THE OPPORTUNITIES

Web 2.0 tools and social networks (especially Facebook) offer companies thousands of social networking applications (Rutledge 2008). Although many of these applications, such as collaboration with business partners, advertising, and recruitment, are external to enterprises, others allow them to exploit opportunities within the company for internal collaboration and decision support.

Based on analysis of more than 100 real-world enterprise social networking applications (Bernoff 2008; Roberts 2008; Weber 2009), we classify such applications into the following six major categories represented by six large circles in Figure 1 (Gold 2009).

Figure 1 shows for each category various connected application areas, represented by smaller circles, in one or two tiers. The six categories and related applications are elaborated next.

2.1. Information Dissemination and Sharing

Applications in this category focus on the use of social networks to disseminate information to target consumers, business partners, or employees efficiently. For example, as an alternative channel to e-mail, many corporations employ blogs, wikis, and Twitter

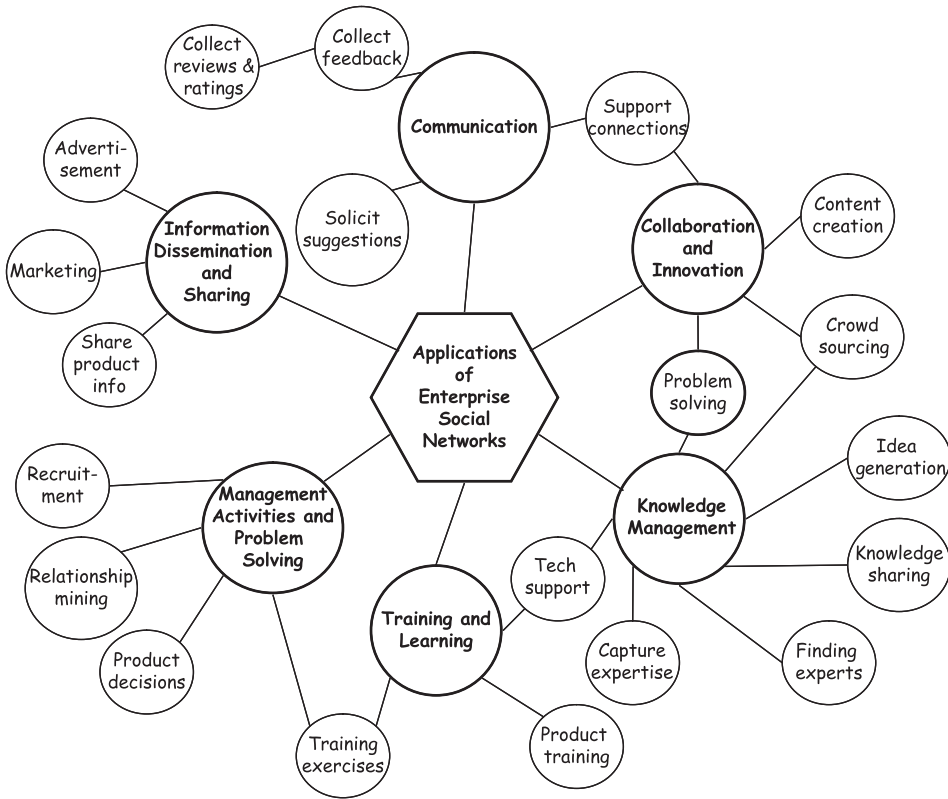


Figure 1 Generic categories of enterprise social networking applications.

for the dissemination of information, ideas, briefs, and best practices to employees (Cone 2006a). These channels can also be used to provide customers with information on product specifications, availability, and usage, and many companies are now successfully advertising their products and services via Facebook, Second Life, Twitter, and similar sites (see Li and Bernoff 2008 for sample applications). Communities (including wireless communities) are also being created around major products, such as the Toyota Scion and Coca-Cola, and firms are using Twitter to advertise, make connections, and identify sales leads and business partners (King 2008; Roberts 2008). The major objectives of such activities are information sharing, advertising, brand and vendor recognition (Drury 2008), and improved customers-vendors trust.

2.2. Communication

Whereas the first category primarily emphasizes the one-way dissemination of relevant information (e.g., advertisements), applications in the communication category often involve responses and other feedback from recipients. For example, monitoring customers’ posts on product functionality and usage in discussion forums and blogs has become a popular mechanism by which companies can obtain valuable input for product improvement and/or to assess the viability of new products. For example, Microsoft’s One Note team implemented several software features on the basis of feedback collected from its

customers via a blog (Cone 2006b). Some companies have supplemented or even replaced focus groups with special online discussion groups. Activities in this category, which include the use of Twitter and blogs, allow firms to discover where potential customers are (i.e., presence awareness) and provide them with the ability to tell others about their work. Communication includes customer ratings and reviews and recommendations, which are very popular. Communication is often related to collaboration.

2.3. Collaboration and Innovation

Social networking tools and services can be employed for effective and efficient collaboration both within and outside organizational boundaries (Coleman and Levine 2008; McAfee 2009). A typical application in this arena involves groups of employees in problem solving and innovation (e.g., joint product design). For example, Janssen-Cilag has replaced its old Intranet-based collaboration system with wikis, and it allows its employees to maintain the content of these wikis collaboratively and collectively (Ives 2009). Organizations, such as Coca-Cola, are also engaging their customers in unique collaborative activities. For example, The Coke Show marketing campaign is based on content created almost entirely by customers. The company also collaborates with customers via Mycokereward.com (Hayes-Weier 2008). Angel.com employs wikis as a collaborative tool to track sales leads, produce marketing material, and write competitive intelligence briefs, and Burger King encourages its online audience to distribute links to the company's video advertisements to friends—a form of viral advertising (Cone 2006a).

The Discovery Channel integrates video and photo upload capabilities to obtain user-generated content from its audience (<http://planetyou.discoverychannel.ca/>). Similarly, MTV Canada has created an online community to allow its audience to generate content, the best of which it then harvests for its own programming. MTV also allows this content to be posted on the content creators' sites for wider viewing (<http://mtvcanada.mixx.com/>). Procter and Gamble facilitates innovation through social networking by providing new ways to communicate and collaborate (Brynjolfsson and McAfee 2007).

A complex and large-scale ongoing collaboration project at IBM, known as the Innovation Jam, allows the company to gather ideas for new products and problem resolution from its employees and partners (Bjelland 2008). IBM's internal social network, Beehive, attracts 53,000 employees (Gibson 2009) who engage in collaboration. The system is connected to Lotus Connections, thus facilitating a number of activities, such as expertise solicitation from the social network community.

2.4. Training and Learning

Some companies employ social networking, particularly virtual worlds, for training purposes. Virtual worlds are popular because they allow training via virtual simulation. For example, Cisco makes use of Second Life on its virtual campus for product training and executive briefings (http://blogs.cisco.com/virtualworlds/comments/cisco_live_in_second_life/), and IBM offers training exercises to its field service teams through the simulation of project management and customer interaction in virtual worlds. Learners, including those in academic settings, can collaborate on class projects using blogs and discussion groups (for further examples, see “profitable social networking” at trainingmag.com, and Fichman and Kane 2009).

2.5. Knowledge Management

Applications in this category are usually employee-driven and involve such activities as knowledge discovery, idea sensation, creation, maintenance, sharing, transfer, and dissemination. Wagner and Bolloju (2005) provide an in-depth discussion of the role played by discussion forums, ratings, blogs, and wikis in conversational knowledge management. Areas of application include the discovery of experts and the mapping of communities of expertise as well as the identification of relevant internal and/or external networks based on e-mail flows. A good example is *innocentive.com*, a social network that attracts the participation of more than 150,000 scientists to solve science-related problems, usually for a cash reward.

Another example is the internal social network created by Northwestern Mutual Life, which attracts more than 7000 financial representatives who share captured knowledge (Brynjolfsson and McAfee 2007). Caterpillar also created a knowledge network system for its employees and dealers, and Pfizer's *pfizerpedia*, which is patterned on Wikipedia, allows the company's employees and partners to create and maintain a huge knowledge base. These large-scale activities are known as "crowdsourcing," "collective intelligence," "mass collaboration," and the "power of the crowd" (Libert and Spector 2007). MIT even has a center for collective intelligence (Brynjolfsson and McAfee 2007). Some companies, such as Netflix and YouTube, employ processes that leverage the power of many to benefit from their knowledge (Howe 2009). Finally, many companies have created retiree corporate social networks to keep retiree knowledge within the company and to allow retirees to connect with one another and the organization. These former employees possess huge amounts of knowledge that can be tapped for productivity increases and problem solving.

2.6. Management Activities and Problem Solving

Applications in this category support managerial decision making through analysis of the data collected in social networks. Typical examples include identifying key performers, locating experts and finding paths to access them, soliciting ideas, developing possible solutions to complex problems (e.g., using the answer functions on LinkedIn), and analyzing managerial connection networks to facilitate succession planning (see Cross, Liedtka, and Weiss 2005 for an overview).

According to Majchrzak (2007), corporate wikis facilitate management activities and innovation for problem solving, enhance reputations, make work easier, and help organizations improve business processes. Li and Bernoff (2008) divided social networking applications on the basis of business functions, such as marketing and sales, customer support, operations, human resource management, and research and development. They also suggest success metrics for each category. An example of a functional application is Deloitte Touche Tohmatsu's social network (D Street), which was established to assist the company's human resource management team in downsizing and regrouping, building networks of experts, and retaining talents. Within a year, D Street had been extended to cover all 46,000 Deloitte employees (Brandel 2008). Hoover Inc. has established a social network that makes use of Visible Path's relationship management technology to identify target business users to build relationships and discover ways to reach specific users (Hopkins 2008). Ypodimatopoulos and colleagues (2010) reported a problem-solving application for discovering expertise by leveraging the professional social network of its employees.

Companies are also employing social networks, such as Twitter, Facebook, and LinkedIn and other business-oriented sites, as tools to recruit new employees. Existing employees, friends, retirees, and other connections help to facilitate such recruitment (Dickler 2009). Through its "I Love My Dog" external network, Del Monte gathers data from pet owners that it then uses to help shape its marketing strategy. The company's private network helps it make decisions about products, test marketing campaigns, better understand buying preferences, and initiate discussions about new items and product changes. Other examples of the corporate use of social networks for marketing activities can be found in Weber (2009) and Li and Bernoff (2008). It is interesting to note the rise of Twitter in all types of enterprise social networking (Dickler 2009).

It is quite possible that the foregoing six categories are not mutually exclusive and that many applications cover two or more categories. For example, IBM employs Lotus Connections to (i) create and maintain a corporate directory of individuals with specific skills, (ii) support communities that share and exchange scientific information, (iii) create microblogs to allow people to find one another, (iv) establish blogs for employees to discuss work experiences and engage in project work, (v) support social bookmarking, and (vi) collect and reuse information related to specific business activities. Other examples include LinkedIn, which is used both to recruit talents and identify sales leads, and IBM's site, which provides knowledge sharing via LinkedIn Answers and its own social network.

Table 1 shows a summary of potential social tools and technologies that can be used to support the activities defined in the previously mentioned six categories. Of course, the tools listed here are only representative ones and are not exhaustive by any means. The various entries in this table were based on success stories reported in case studies. In the following section, we discuss how individual companies can be sure that such a fit will work for them.

3. FRAMEWORK FOR THE ADOPTION OF ENTERPRISE SOCIAL NETWORKS

Knowledge of the opportunities available is the first step for any corporation considering social networking. The next step is to analyze its particular circumstances and decide on technology adoption. The adoption of social networking involves several dimensions, which are listed in Table 2, each with some representative issues and considerations. Note that these dimensions and considerations will vary from one organization to another and that the adoption decision may include several sub-decisions, such as the selection of public versus private networking, selecting specific social software tools, and designing risk mitigation mechanisms. Companies also need to prioritize the importance of specific applications and make decisions regarding other implementation issues, such as project management.

Previous research has addressed a few of the issues related to the adoption of social networks. For example, Nosek and McManus (2008) described the theoretical, conceptual, and technical boundaries that limit the development of innovative collaboration technologies in social networking. Li and Bernoff (2008) proposed a four-step approach to planning called POST, which stands for people, objectives, strategy, and technology. The POST approach requires consideration of user needs, the goals to be achieved, implementation strategies, and the available technology when planning to take advantage of social networks.

Table 1 Social networking tools and technologies.

Category → Tools	Information dissemination and sharing	Communication	Collaboration and innovation	Training and learning	Knowledge management	Management activities and problem solving
Microblogging (e.g., Twitter, TwitterFeed)	H	H			L	L
Blogs (e.g., Xanga, Posterous)	H	M	M		H	L
Discussion Forums (e.g., HyperOffice)	M	M	L		M	H
Wikis (e.g., TWiki, MediaWiki, TikiWiki)	M	H	H		M	L
Social presentation (e.g., YouTube, Flickr)	H			M		
Social bookmarking (e.g., Digg, Del.icio.us, StumbleUpon)	M		L		M	
Social networks (e.g., LinkedIn, Xing, Facebook)	H	H			M	M
Virtual worlds (e.g., Second Life, Entropia Universe)	H	M	H	H		M

Table 2 Adoption dimensions of enterprise social networks.

Dimension	Possible issues and considerations
Main purpose or goal	Purpose such improving team/individual productivity, improving customer satisfaction, and soliciting user generated content
Targeted participants	Internal vs. external; customers vs. general public; consumers or suppliers
Application category	Which ones of six categories are relevant? Which categories should be considered first?
Type of network	Public vs. private; or a combination; professional vs. generic
Technology selection	Criteria, such as access alternatives, security mechanisms supported, ease of use, and integration with existing infrastructure/applications
Anticipated risks	Legal, security and privacy, intellectual property and copyright, user resistance, misuse and abuse
Risk management mechanism	Governance and policy, education, phased introduction, access control, monitoring and filtering, legal insurance

The aforementioned research may be helpful at the strategic level, but most organizations also need more practical mechanisms to help decide whether specific social networking will fit their needs (e.g., improve the performance of specific tasks). In this article, we adopt the fit-viability framework (Liang et al. 2007) to deal with the adoption of social networking for specific tasks or projects. The model is used because it was originally designed for analyzing organizational adoption of electronic commerce projects and was successfully used in other information technology and is suitable for the adoption of social networks in enterprises.

Tjan (2001) originally proposed the fit-viability model to evaluate the organizational adoption of Internet initiatives. His model includes two dimensions, fit and viability, with the former measuring the extent to which new applications are consistent with the organization's core competences, structure, value and culture, and the latter dimension addressing the human resource requirements, capital needs, and other factors that may determine whether the technology is feasible and suited to the intended task. The model was later modified and adapted to assess the adoption of mobile commerce technologies (Liang et al. 2007; O'Donnell et al. 2007).

In the revised model, the fit dimension measures the extent to which the features of a technology match the requirements of the task it is intended to support. Viability refers to the extent to which the organizational infrastructure is ready for the adoption of the new technology. Adopters need to consider the organization's general economic feasibility, technical infrastructure, and social readiness. Based on the recommendations of a number of researchers and practitioners (e.g., Butow and Taylor 2008; Rutledge 2008; Schwartz 2008; Shuen 2008; Horwitt 2009; Weber 2009; Tjan 2001) we propose a modified fit-viability framework for the adoption and use of enterprise social networking by organizations. The proposed framework is shown in Figure 2.

The proposed framework includes two major considerations: (a) the opportunity that is driven by the fit between the target tasks and the available technology, and (b) the organizational factors that need to be considered in the adoption decision. Enterprises should deploy those projects that provide the best fit and are most viable. For those that the fit is not viable, they should increase their readiness before deployment. Technology that does not fit an organization's needs or tasks should be avoided. Given that the model is generic, the considerations were tailored to the nature of enterprise social networking. When organizations apply the proposed framework to assess the usefulness of a particular technology, they need to engage in the following six-step process.

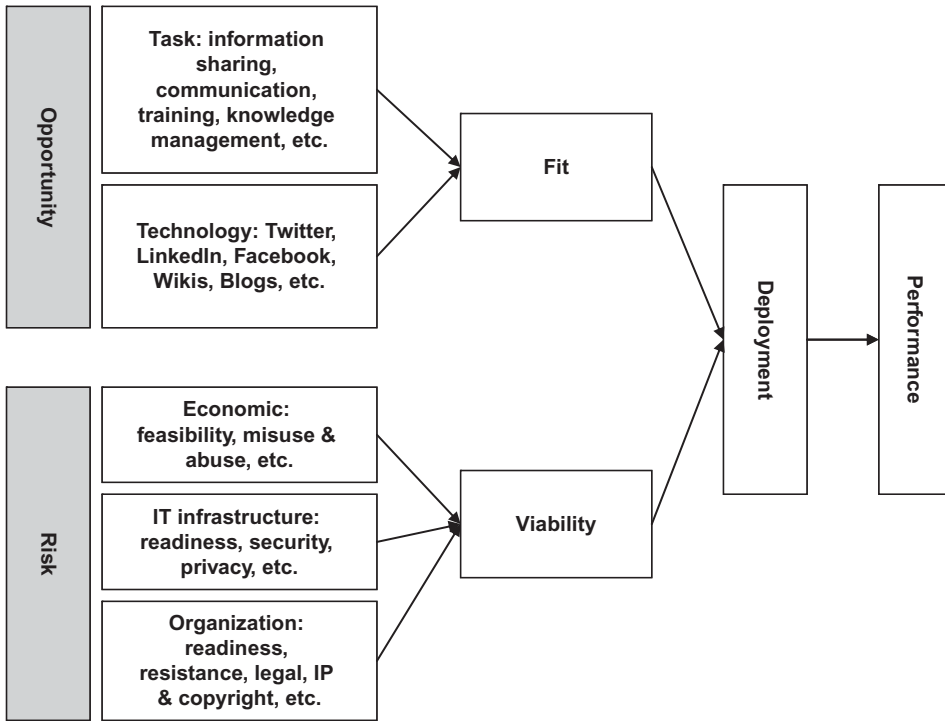


Figure 2 Proposed research framework.

3.1. Determine the Fit Between Social Networking Technology and the Target Task(s)

Social networking is useful only if it applied to appropriate tasks. The first step is thus to determine needs and expectations. Is the company looking for better collaboration with suppliers or better communication with customers? Different objectives and requirements are achieved through different social software tools and technologies. This first step requires careful study of corporate needs, priorities, and objectives. One way to assess the fit between social networking and the task is to determine whether the task includes any of the six categories of needs outlined in Table 1. For example, a business intending to use wikis for information sharing can be a high fit, but using microblogs for knowledge management may be considered a low fit. For further discussion of the opportunities available to and needs of small- and medium-sized enterprises, see Harris and Rae (2009).

3.2. Analyze the Technology’s Economic Viability

The adoption of social networking requires an economic evaluation of its benefits and costs. There are indeed numerous tangible and intangible costs and benefits associated with the use of such technology, especially in in-house social networks. It is thus necessary to determine whether a given project will be financially beneficial to the enterprise and to investigate the potential for and costs of its misuse and abuse before adoption. Although

calculation of the return on investment (ROI) of social networking is a complex issue that requires further research (e.g., Chui, Miller, and Roberts 2009; Solis 2010; Li and Bernoff 2008)—a rough estimation of potential benefits must be made using social metrics (e.g., Sterne 2010) prior to deciding adoption of social networks in an organization. There are plenty of return on investment and cost/benefit analysis tools priced at different levels. Some are expensive proprietary products, while others are free, open source software. A firm needs to consider which kind of tools to use.

3.3. Identify the Necessary IT Infrastructure

Before a company can successfully adopt social networking technology, it must have adequate IT infrastructure including security in place. Otherwise, disaster may ensue. The critical issue is to find a way of determining the proper level and mix of infrastructure required, which would be an interesting topic for further research. This third step also requires a determination of which type of social software to employ and the objective to which it is best suited. This is probably the step where the decision regarding which social network(s) to join for the specific application needs to be made.

3.4. Examine the Human and Organizational Factors Associated with the Application

Several human factors are crucial to the successful adoption of any technology, including employee training, user involvement, organizational culture, and potential power shifts. Motivating employees to join and contribute to the network is also of the utmost importance. It is not only essential that the technology fits the task, but also that it is acceptable to the members of the organization (Sangwan 2009). Organizational support for implementation, particularly from top management, is critical to the success of any new technology.

3.5. Choose a Deployment Strategy

Once a given technology has been adopted, it can be introduced into the organization in several different ways. For example, its implementation can be divided into several stages, including an experimental one, and it can be carried out in-house or outsourced to a professional vendor. The impacts of the technology, such as those on performance and customer satisfaction, should then be measurable and assessed for justification purposes. This brings us to the final step of the process.

3.6. Measure Performance

Justification involves assessment of the business value of social networking activities and measurement of their contribution to performance. For example, many companies employ Facebook polls to gather user opinions (http://vizu.typepad.com/facebook_polls/), but how valuable are they? Do they contribute to business performance and, if so, how can that performance be measured? Because enterprise social networking may bring in potential benefits in many different aspects, thus performance measurement should be multi-dimensional and not restricted to ROI justification (e.g., using a scorecard approach).

The following are sample criteria for measuring the performance contribution of enterprise social networking:

- Increased conversion rate
- Increased employees and/or customer satisfaction
- Reduced customer service cost
- Reduced rate of customer attrition
- Increased stickiness (time spent in Web site of vendors)
- Intensity of customer-to-customer communication
- Increased revenue
- Number of ideas generated by employees and partners
- Online social shopping volume (if available)

Many other factors may influence the social networking adoption decision, including application scope, network type, the size of the community, the nature of the opportunities available, software tools, organizational culture, the country or countries involved, and the age distribution of community members, among others. These factors also need to be considered during viability assessment in the adoption decision process.

4. RISK MANAGEMENT AND MITIGATION

Although enterprise social networking presents organizations with many opportunities, and the fit-viability model provides a framework for incorporating the managerial considerations involved in the analysis of adoption of such technology, its implementation may involve a number of potential risks. The most frequently observed risks and related concerns (Hoover 2007b; Steinhart 2009) fall into five major groups: legal, security and privacy, intellectual property and copyright, employee resistance, and misuse and abuse. The first three risk groups are related to user-generated content published on shared media, whereas the last two concern the use of social networks.

4.1. Legal Risks

The legal risks resulting from the content created on blogs, conversations, wikis, and the like by employees, particularly those at the top level, may be significantly more serious than those associated with the content posted by customers on company blogs or discussion forums. Activities, such as using improper language, not obtaining permission, and using false information can end in a courtroom. Legal risks may also arise from the collection of information on race, ethnicity, or medical problems from external social networks, especially if that information is used improperly or illegally when recruiting employees or used to harass colleagues. A related risk, particularly with user-generated content, is compliance violation.

4.2. Security and Privacy

Activities, such as the intentional or unintentional disclosure of confidential or sensitive information on publicly accessible or internally shared workspaces or the introduction of malicious codes by hackers via the Internet, contribute to security and privacy risks (these are the greatest risks, according to Hoover 2007b). The mechanisms employed to

implement social networking applications create many opportunities for attackers. In addition, new types of threats, such as the creation of fake profiles by hackers, have also been observed. Social networks are easy for hackers to attack and users are subject to phishing (Vascellaro and Worthen 2009).

4.3. Intellectual Property and Copyright

A significant legal liability is posed by violations due to unauthorized postings of copyrighted content and/or the failure to obtain permissions from individuals and organizations before creating content about them. Another risk factor is the quality of content contributions. Biased, inaccurate, and/or obsolete information may limit the benefits of social networking. Barnes and Barnes (2009) pointed out the legal risks of copyright and trademark violations and the use of inappropriate data.

4.4. Employees Reluctance or Resistance to Participate

Employee resistance or reluctance to use enterprise social networks and Web 2.0 tools can be a serious problem (Bennett 2007). Based on a study of wikis in a university administration context, Raman (2006) suggested that, to minimize employee reluctance/resistance, such issues as sufficient user training, resource availability, and support skills should be considered in the social network planning stage.

4.5. Misuse and Waste of Time and Other Resources

Extensive employee engagement in social networking may lead to the misuse and/or abuse of Internet resources. For example, employees who engage in online entertainment at work may waste productive time. Related areas of concern include the misuse or waste of money, the harassment of colleagues, and the slowing of the Internet. For an overview of such misuses and other security and legal risks, see MessageLabs (2009).

In summary, companies embarking on social networking may find themselves faced with any or all of the previous risks. There are, however, several approaches to mitigating these risks. Some of the mechanisms commonly used to manage the foregoing risks are presented in Table 3, which was constructed based on information provided by Barnes and Barnes (2009) and other researchers, and on the authors' experience. The table ranks

Table 3 Suitability of different risk management mechanisms to different risk types.

Type of risk	Risk management mechanism					
	Governance and policy	Education	Phased introduction	Access control	Monitoring and filtering	Legal insurance
Legal	H	M			M	H
Security and Privacy	L	M		H	H	L
Intellectual Property and Copyright	M	M	L	H	H	M
Resistance		H	M			
Misuse and Abuse	L	M		L	M	H

these risk management activities as high (H), medium (M), or low (L) based on our perceptions of their suitability for various risk categories. The H, M, or L assessments may change over time and according to the type of project involved. They are provided here only for illustrative purposes. Several of these risk assessment and management mechanisms have been either proposed or adopted in the successful implementation of enterprise social networks (e.g., modeling and simulation for risk assessment [Squicciarini, Mont, and Rajasekaran 2009], establishing private social networks [Rooksby 2010]). The first three items in Table 3 address risks that may occur during the planning phase of such implementation, whereas the remainder concern unanticipated risks that may occur during social networking use.

In order to mitigate potential risks associated with using enterprise social networks, the following six mechanisms are suggested.

- a. *Governance and policy.* When implementing social networking, corporations should establish a governance structure and policies for anticipated uses (e.g., permissible content, procedures for making contributions), and then inform employees of the possible consequences of policy violations. It is also important to establish who will be responsible for deciding what content is placed on the network and how long it will remain there. Existing policies, such as those regulating e-mail communications, could be adapted for this purpose.
- b. *Employee education.* Educating the prospective members of a social network will help not only in communicating the governance structure and policies, but may also mitigate resistance to joining and/or contributing.
- c. *Phased introduction.* The phased introduction of social networking projects and the targeting of trial groups may be useful in addressing employee resistance to participation. In addition, profiling tools (e.g., http://forrester.com/Groundswell/profile_tool.html) can be employed to identify the characteristics of target users, with the information collected used to encourage participation. For example, Miller (2007) described how Dell launched internal blogs before creating its IdeaStorm network for customers. Siteworx Inc. (2009) proposed a similar phased approach with implementation guidelines, and other excellent examples of this strategy include Johnson & Johnson's approach to introducing its blogs, YouTube videos, and Twitter (Ploof 2009).
- d. *Access control.* Access control is an important mechanism that defines allowable user groups, what information users can access and their expected usage profiles. Related technological support, such as content filtering according to user location, the pre-processing of content and the enforcement of networking time windows, may also be useful. Furthermore, security mechanisms that are specifically designed for Web 2.0 technologies (e.g., see Blue Coat ProxySG appliances and Palamida.com products) can be employed to supplement the existing protection mechanisms of information systems infrastructure (e.g., Steinhart 2009).
- e. *Monitoring and filtering.* Companies may also employ a combination of human and technology-based solutions to monitor content creation, updating and usage to determine compliance with corporate policies and ethics, and to analyze user behavior. Although reviewing and possibly editing content before publishing it may result in posting delays, or make contributors unhappy, doing so may enhance the overall quality of contributions.
- f. *Legal insurance.* Finally, firms may also consider obtaining legal insurance to protect against the unforeseen consequences of the misuse and abuse of social networking.

5. CONCLUSION

Significant doubts remain over the business value of public social networks, especially non-business-oriented networks, such as MySpace and Facebook. However, the situation is changing, as the number of business applications available on these sites increases. Such applications include advertising, market research, recruitment, and information sharing and customer engagement. In addition, some researchers believe that the extension of Web 2.0 to Web 3.0 tools (semantic web, personalization, intelligent searches, behavioral advertising, etc.) will increase the usefulness of the commercialized activities on social networks. Private (in-house) enterprise social networks may also add significant value to such applications as problem solving, collaboration, knowledge management, information sharing, and collective intelligence. As both types of networks are expected to soon become ubiquitous among enterprises, their business activities must be properly planned and managed.

Enterprise social networking, whether public or private, can serve as an important vehicle for the creation of social capital within organizations and as a key driver to build effective and efficient business and create competitive advantage. It can, however, be a double-edged sword, and to ensure successful institutionalization, social networking projects must be adopted only with adequate knowledge of its opportunities and associated risks. In this article, we explored these opportunities and proposed a framework for the adoption and implementation of social networking technology. We also examined the potential risks involved and suggested mechanisms for their mitigation.

Our proposed framework outlined related constructs that can be employed to develop deployment plans for the adoption of social networking tools. Further research is necessary, but in the interim corporations should not ignore the opportunities these tools may confer and should at least experiment with some of the most promising, perhaps by selecting the more appropriate applications from the six categories described in Section 2. Such experimentation is especially advisable for firms whose competitors are either planning to adopt or are already using social networking technology. Furthermore, appropriate support and reward mechanisms are required to facilitate effective usage of implemented technologies by employees and customers.

The fit-viability framework proposed herein summarizes the major considerations involved in the adoption of social networking tools and technologies and may be useful for both practitioners and academics. Practitioners can employ the framework to examine the opportunities and risks of adopting enterprise social networking in their organizations and to determine whether it is suitable and economically and organizationally viable for their organizations and whether they have adequate technological capabilities to support it. Once a social networking project is considered to provide a good fit and to be organizationally viable, the firm needs to develop a good deployment strategy for its adoption based on our proposed process. The deployment strategies could consider in-house implementations, as well as making use of external vendors and facilities.

Another issue of adopting social network sites for collaboration is the complexity in managing multiple social networking Web sites over which the organization has limited control. Therefore, the process for selecting a set of social networking solutions that can work together to reduce the effort after adoption is extremely important. Managers also have to weigh different factors carefully to reflect the nature of their organizations. For instance, the risk concerns of a government agency would be very different from that of a university, as the collaboration process may involve more sensitive information for the

former. Therefore, for organizations with high information sensitivity, risk concerns may play a major role in assessing the viability of social networking technologies.

For academics, the fit-viability framework and the deployment process suggested in this article provide challenging issues for further research via case studies, empirical surveys, or experiments as well as a basis for theoretical development. The framework and the deployment process discussed could be validated through studying real-world experimentation.

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