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Social Computing and Networking: Is Your Organization Ready?

Munir Mandviwalla Associate Professor and Executive Director

Pradeep Racherla Research Associate

Sunil Wattal Assistant Professor



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## Introduction

The technologies related to social computing and networking such as MySpace, Facebook, Digg, collaborative wikis, interactive blogs, and even Second Life are now an established part of the consumer consciousness. Many observers have linked social networking to concepts such as flatness, openness, peer recommenUse and adoption

In general, organizations are very enthusiastic about the social computing phenomenon. Bulletin boards are the most commonly used tools in organizations (63%) followed by wikis and networking tools such as LinkedIn (45%) (See figure 1). The least used tools are tagging/ social bookmarking and virtual environments



collectively referred to as 'Web 2.0' (O'Reilly, 2005) while the busi-

ness application has been termed 'Enterprise 2.0' (McAfee, 2006). In this report, we use the term 'social computing and networking' to refer to web based technologies that enable communication and collaboration. The goal of this report is to provide a snapshot of the organizational adoption, usage, benefits, and risks associated with these technologies. The data and conclusions of this report are based on an exploratory research method that included interviews with business leaders; evaluating specific tools; a symposium and focus group, and a survey on adoption (see the sidebar at the end for further details).

# Bulletin boards63%Blog38%Book marking25%Media sharing28%RSS28%Networking45%Virtual environments4%Wiki45%



(e.g. SecondLife). Approximately 55% and 41% of organizations have plans in the near future to use tagging and RSS (see figure 2). Very few organizations plan to adopt virtual environments such as SecondLife in the near future. This is a striking finding given all the visibility of SecondLife in the business media.

The results represent a cross section of industries, firm sizes, and hierarchical levels. IT and consulting firms dominated the sample (69%), while there were 54% middle and junior managers and 36% from senior management. 41% represented organizations with less than 500 employees and 34% represented large organizations with greater than 5000 employees.

We found a significant correlation between organization size and types, and tools adoption



Figure 2: Social computing adoption by organization type



Figure 3: Social computing adoption by organization size

(see figures 2 and 3). Specifically, IT/consulting firms tend to use wikis, RSS feeds, social book-

showed higher usage of blogs, RSS and tagging. Small and medium sized organizations showed

marking, and networking tools more than the other industries. Blogs and bulletin boards are uniformly used across industries. Large and medium sized organizations

- 1. Knowledge based firms favor social computing over traditional firms.
- 2. Medium to larger sized firms are more interested in social computing.

higher usage of bulletin boards and social networking applications. To summarize, firms from the knowledge economy tend to favor social computing tools more than firms operating in the traditional economy. Further, medium to larger firms seem to be the most interested in adopting these tools.

For larger firms, adoption is often a grassroots initiative. It could start with a group of employees who dabble with various social tools in their daily work. This is a potential challenge for firms. Organizations have experience with top down enterprise wide implementation of technologies, and much of the academic and practitioner literature focuses on identifying issues related to top-down enterprise level adoption. Yet, social computing and networking technologies are often adopted bottom-up. Individual employees typically have had extensive experience using these tools in their daily lives and bring expectations and models of use that may be incompatible with organizational goals. The following quotes illustrate the challenges:

Should everyone be allowed to participate? Or should participation be linked to returns?"

Who will regulate this technology? Which department will take ownership? There is still a lack of clear guidelines

Social computing thins the line between internal and external communication. One of the major challenges for our organization in this regard is to establish metrics to delineate sensitive content from information that can freely distributed across functional and organizational levels.

Given the above, organizations will have to carefully balance leveraging grass roots enthusiasm with meeting corporate goals and policies. In some ways, social computing resurrects the 1980's – when personal computers were first introduced and organizations were considering how to deal with the "end-user computing" phenomena. To further complicate the issue, most organizations do not have experience with what it means to allow employees to post on public blogs or establish "friendship" links. For example, one large firm we talked with supports social computing by encouraging employees to use an internal version of a LinkedIn type of tool, but discourages them from using external networking tools to ensure confidentiality and security. For the employees the internal tool is not compelling because it divides their contacts.

Age was frequently mentioned as a very important adoption issue during the symposium. Some managers tend to believe that there is an automatic generation gap at work. We are not convinced that the age question is that simple. First, in a very interesting focus group discussion with younger workers at a local firm, we realized that the most important gap was not age but when the person went to college. Individuals who were 28 years old but went to college when email and instant messaging was dominant were perceived to be different from a 24 year old who went to college in the Facebook era. Second, preliminary results from an analysis of more than

#### Key adoption issues

- 1. Usage will accelerate.
- 2. Supportive policies are needed.
- 3. Role of the IT department needs to be defined.
- 4. The impact of age on adoption is complicated.

2000 bloggers inside an organization suggest that that the older generations indeed use blogs less than the Millennial generation (those born after 1980); however, GenX (those born between 1965 and 1980) use blogs *more* than the Millennial generation. To summarize usage and adoption:

• Adoption will likely continue to accelerate, especially as the new generation of workers enter the workforce, and also due to the

widespread availability and interest in social computing tools.

- Organizations will need to think through and establish policies on who can participate and more importantly rationalize different levels of access. A restrictive policy may be the easiest and most secure but it may stifle the very purpose of these tools.
- The technologies are relatively easy to access, use, purchase, and adopt. Specific business units will not necessarily need the support of the IT department to facilitate adoption. This will lead to questions about the appropriate role of the IT department in social computing.

# Goals and Benefits

he meaning and **I** goals of social computing and networking are still evolving. Today, organizations are still relying on traditional collaboration and communication tools while simultaneously adopting

contemporary technologies (e.g., networking applications such as LinkedIn). In figure 1, bulletin boards - a traditional communication and collaboration tool - which have been around for more than 30 years - are used the most. One participant commented: The goal right now is to

consolidate the gains of collaborative tools within the organization before embarking on new tools. Another participant commented: We are still not sure which of these technologies will survive

"The most important benefit of social computing is bi-directional communication: communication that includes structures that support discovery, interaction, and relationships among two or more individuals."

is the main reason why majority of the businesses are waiting on the sidelines. Several of the participants defined social computing as follows:

Online collaboration among persons with similar interests that creates value for organizations both internally and externally.

Systems, tools and devices that take us from a one dimensional to a bidirectional paradigm - for the purpose of supporting communities.

The use of technology to encourage and facilitate social interaction and collaboration among distributed group of people.

Clearly, organizations view collaboration as integral to social computing. We conclude that the most important benefit of social computing is support for bi-directional communication;

> communication that includes structures that support discovery (e.g., search, tagging), interaction (e.g., messaging, document sharing), and relationships (e.g., contacts, friend links) among two or more indi-

viduals. Finding, linking to, rating, and interaction among individuals seems to be essence of social computing and networking.

It is the bi-directional communication that establishes the basis to share knowledge and professional relationships. As one person from a

"Groupware, collaboration technology, intranets, portals, and knowledge management are being re-imagined and subsumed by social computing and networking."

large IT consulting firm that is actively implementing social computing tools suggested, ... the primary activity is connecting with people. It's sharing media. Users are providing value to a website. Another partici-

the ultimate test of enterprise value addition. That

pant who is leading such initiatives in her organi-

zation remarked, *It is informal* sharing that is benefiting existing employees. There's a much better understanding of how people are doing and what they're doing. It's a way of keeping in touch without having to ask those questions every day.

Structures that supported the above activities have existed in one form or another in more traditional communication and collaboration technologies (e.g., presence data – "who else is

online" has been available in instant messenger tools for many years). One difference is that traditional technologies have focused more on the *task* of collaboration (e.g., brainstorming, chatting, shared document development), while social technologies are more focused on establishing and maintaining the relationships that underlie collaboration. Given the slow adoption of traditional collaboration technologies, social technologies may represent the "missing link" or precursor to collaboration.

Our evaluation of current tools suggests that concepts and tools commonly referred to as groupware, collaboration technology, intranets, portals, and knowledge management are being re -imagined and subsumed by social computing and networking. For example, well known tools such as bulletin boards are being recast as social software by the addition of features such as rating and person-to-person messaging. In some organizations, intranets and portals are being replaced by social computing platforms. There is a convergence underway which will result in organizational intranets and collaboration technologies folding into the social computing and networking paradigm.

Benefit	Mean	SD
Create a sense of community	4.28	0.59
Enhance innovation	4.10	0.62
Increase knowledge exchange	4.38	0.56
Improve internal image	3.86	0.74
Supplement or replace hierarchical con- trols	3.34	0.81
Enhance customer participation	3.86	0.74
Engage with customers	4.07	0.75
Allow customers to modify or create new products and services	3.69	0.71
Allow access to personal information of peers	3.21	0.68

#### Table 1: Social computing benefits

To summarize, social computing and networking is a means to an end. In other words, it will not be enough for organizations to simply implement social computing and networking and stop there. For most organizations, it is a mechanism to enable collaboration and knowledge management. Therefore, organizations and researchers studying the role of social computing and networking should consider casting such initiatives within existing collaboration and knowledge management concepts and projects.

The most important specific benefits of social computing and networking to organizations are internal knowledge exchange, creating a sense of community, and enhancing the innovative potential of the organization (see Table 1). Organizations are less enthusiastic about enabling customer co-creation of products and services, supplementing hierarchical controls, and enabling access to personal information of peers. Large organizations tend to favor internal usage while more small and medium sized organizations encourage usage beyond organizational boundaries.

The results suggest the following three challenges: First, the interest in knowledge exchange, innovation, and community building suggest that organizations want to leverage the social or "crowd sourcing" power of social computing and networking to create or retain knowledge. However, it also seems clear that organizations don't fully understand how to go about realizing this potential. This is not surprising since most conceptualizations of the firm view knowledge as a unique resource that needs to be protected, controlled, categorized, and shared on a need to know basis. Organizations and associated knowledge management systems have traditionally focused on creating structures and rules to capture and control critical knowledge. On the other hand, social computing tools support relatively unfettered and organic knowledge acquisition, transfer, storage, and application. This approach facilitates learning and performance improvement through social interactions. Research on open source communities has provided some evidence that knowledge sharing and innovation require intrinsic motivation and bottom-up perspectives. The challenge is that existing organizational structures and systems created to manage knowledge may end up discouraging innovation and knowledge reuse through social computing.

Second, the open structure and processes that come with social computing are in contrast to the controls and hierarchical thinking common in organizations. For example, as discussed above, large organizations favor internal usage perhaps because such usage is easier to manage, control, and secure. There are several examples of large organizations that have deployed internal versions of tools such as LinkedIn but many employees find these sites less useful because they cannot link to and leverage their extraorganizational network. Further, it is unclear if the cultural and world view differences embedded in these tools will cause adoption and implementation problems. For example, one manager we interviewed is not interested in engaging with employees who are not qualified to comment on his ideas.

Finally, a related concern is the value of participation itself. Existing enterprise systems assume that the user is mostly the recipient of information delivered through the work system. However, in the case of the social applications, the user is both the content generator as well as the recipient. The challenge then is to move away from the traditional conceptualizations of user training and acceptance testing toward better understanding and leveraging the link between passive participation and active value addition to the enterprise.

## Risks and challenges

he biggest risk of social computing and networking is that it could be used by employees to bypass formal communication channels and lead to loss of organizational control (73% were concerned about this issue). A lower percentage of organizations believe that the technology creates a security risk for organizations (42%) and can damage the image of the firm (31%). People who are at a higher level in the organizational hierarchy tend to be more skeptical. They are not convinced that these tools have the potential to transform the organization. As one participant remarked, ... it is unrealistic to think that managers who till now wielded power will surrender it to people just because of new technologies. Another participant remarked: The time commitment is too high. We still do not know the exact resource inputs and outcomes to make an informed decision on these new breed of technologies.

To summarize, managers are concerned that

social computing and networking (a) may introduce chaos and "crowd noise" into established and effective organizational hierarchies, (b) since social computing in general provides more communication

## Key challenges

- 1. Current organizational structures discourage social computing.
- 2. Cultural change is needed to leverage social computing.

ment.

3. New concepts are needed to value participation.

morale and retention, for others, it may be an impetus for knowledge sharing and creation.

2. Bi-directional communication that supports finding, linking to,

and sustaining interaction among individuals

seems to be essence of social computing and

networking. We believe that the above basic

toolset of social computing and networking is

now reasonably well established. It is unlikely

that the basic concepts will change and there-

fore it is appropriate for firms to start projects and consider enterprise wide deploy-

3. Organizations are mixing and matching well

cussion boards with newer tools such as

established communication tools such as dis-

channels and also further dilutes organizational boundaries, there is concern that inappropriate or damaging behaviors will be magnified, and (c) managers do not understand how to value and measure the benefits (and costs) of social computing and networking.

# Summary and conclusion

S ocial applications hold tremendous potential for businesses. This potential has not yet been fully defined. In this report, we provide an empirical perspective on the current state of the art of social computing. The results will help organizations leverage these technologies. The main conclusions of our research include:

1. Organizations are enthusiastic about the potential of social computing. However, there is confusion and significant variance among firms in how they define and value social computing and networking. We recommend that firms pursue social computing and net-

working projects in an opportunistic manner so that they can explore relevancy and value in their own context. For some firms, the value may be realized in improving employee

## Recommendations

- 1. Adopt an opportunistic approach.
- 2. Empower users to lead adoption.
- 3. The technologies are ready for deployment.
- 4. Integrate collaboration and knowledge management projects into social computing.

shared bookmarking and linking and are reimagining the role of traditional toolsets. In fact, social computing may be a precursor to traditional collaboration. These newer technologies may provide the missing structures needed to enable true collaboration in organizations. "Groupware" never reached widespread critical mass and many intranets have

atrophied to simplistic top level menus for transactional tasks such as checking your benefits. If social computing and networking

> can truly make it easier for workers to find, link to, share, and use knowledge then the organizational impact will be transformational.

> 4. Social computing and networking bring norms and ways of working

that do not easily fit into traditional hierarchical organizations. Leveraging these tools to create or retain knowledge will require careful planning and change. The cultural change requirements will likely be a critical success factor. Therefore, IT departments should consider empowering end-users to lead adoption, and form partnerships with users to define appropriate organizational usage.

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## Further reading

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## Research approach and methods

To understand the current state of social computing and networking, we followed an iterative exploratory research approach:

- 1. We conducted an informal round table discussion with a group of twelve senior business executives to understand the general domain and formulate interesting questions.
- 2. Two of the authors visited the site of a large Northeastern U.S. firm that is successfully deploying a social networking platform and interviewed the key managers and users. We also report preliminary results of a study involving this organization.
- 3. We reviewed and cataloged the existing academic and practitioner literature.
- 4. We also evaluated a representative sample of the technologies including Microsoft SharePoint, BuddyPress, Facebook, del.icio.us, MySpace, digg, NewsGator, Word-Press, the IBM/Lotus suite of social technologies, Elgg, SecondLife, YouTube, Social-Text, PeopleAggregator, Ning, LinkedIn, and ZiiTrends.
- 5. We hosted a symposium and focus group on the topic. The symposium was led by a panel of five thought leaders who have played a major role in deploying social applications in their respective organizations. The expert practitioners participated in a two hour conference call to identify important issues with one of the authors prior to the event. The symposium was advertised to local businesses and attracted about one hundred and fifty registrants. We selected about half the registrants by balancing level, size, and type of firm. Seventy three people attended the symposium. The event consisted of about one hour of moderator led questions and answers, followed by about an hour of small group breakout interaction. The participants were divided into tables of eight and each table was asked to identify a key benefit or risk related to social applications. We recorded the symposium and transcribed the results.
- 6. We invited the participants to complete a questionnaire on the current state of social computing and networking in their respective companies. The questionnaire consisted of simple items to assess current and future adoption and use of a representative sample of social computing and networking technologies. Twenty nine responses were collected. The responses may double count certain companies as in some instances there was more than one individual representative from the firm. We included questions about organizational characteristics, benefits, and risks along the following six dimensions that we elicited from our literature review: community building, innovation, knowledge and information sharing and use, organizational hierarchy, customer/ supplier relationships, and public relations. We created one item questions on the above dimensions and the results are rated on a 5 point Likert scale.

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## About the authors

**Munir Mandviwalla** is Associate Professor and founding chair of the Management Information Systems department, and Executive Director, Institute for Business and Information Technology, Fox School of Business, Temple University. Dr. Mandviwalla has published articles on collaborative systems, virtual teams, software training, peer review, and globalization. His most recent work in 2008 includes identifying and defining the concept of municipal wireless networks (Communications of the ACM) and a case study of global integration (Ivey Publishing). He is currently working on a social computing project with a large electronics and manufacturing firm and on a model to explain wireless technolo-



gies. His publications have appeared in Management Information Systems Quarterly (MISQ), ACM Transactions on Computer Human Interaction, Journal of Organizational Computing and Electronic Commerce, Decision Support Systems, Small Group Research, Communications of the Association for Information Systems, Public Administration Review, and Information Systems Journal. His work has been supported by grants from the National Science Foundation (NSF), Bell Atlantic, IBM, Microsoft Corporation, CIGNA Corporation, Advanta Corporation, Lotus Development Corporation, and Lilly Endowment, Inc. In 2000, IBM selected him for their Faculty Partnership Award in recognition for contributions to E-Business teaching and research. In 2002, The Claremont Graduate University recognized him with their Alumni Hall of Fame award.

As executive director of the Institute for Business and Information Technology, Mandviwalla leads a full service institute that engages with industry at multiple levels including research and human capital development, and provides faculty and students with funding, scholarships, contacts, and professional development. As the founding chair of the department of Management Information Systems, Mandviwalla leads the research and teaching activities related to information systems for the Fox School of Business. He holds a BSc in Systems Engineering from Boston University, a MBA from the Peter F. Drucker School of Management at Claremont Graduate University, and a Ph.D. in Management Information Systems from the Programs in Information Science at Claremont Graduate University.

Contact information: Munir Mandviwalla, Associate Professor and Chair Fox School of Business, Temple University 1810 N. 13th Street. Speakman Hall (006-00) Philadelphia, PA 19122, USA mandviwa@temple.edu, 215-204-8172 **Pradeep Racherla** is a doctoral candidate in business administration at the School of Tourism and Hospitality Management and Fox School of Business, Temple University. After four years as a research associate with the National Lab for Tourism & eCommerce, he will join the College of Business at West Texas A&M university as an Assistant Professor (Marketing and Management). His research interests include knowledge management, organizational learning and collaborative systems and business marketing networks. His recent work has been published in prestigious journals such as *Cornell Hospitality Quarterly*, *International Journal of Hospitality Management*, and *Journal of Hospitality and Leisure Market*-



*ing*. He holds an MBA, and worked for four years as a channel partner for a major environmental and energy equipment firm in India. During the past four years, he has worked on several knowledge management projects for clients in the U.S.

Contact information: Pradeep Racherla, Research Associate Fox School of Business, Temple University 1700 North Broad Street, Suite 201 Philadelphia, PA 19122, USA deepur@temple.edu, 215-204-5612, http://pradeepracherla.net **Sunil Wattal** is Assistant Professor of Management Information Systems at the Fox School of Business, Temple University, Philadelphia, USA. Dr. Wattal's expertise focuses on information technology privacy and personalization as well as economics of information systems, IT security, and internet marketing. His work has been published in *IEEE Transactions on Software Engineering* and in international conference proceedings. His current research includes measuring the personalization privacy tradeoff of email advertisements, and bidding behavior of pay-per-click advertisements on search engines. Dr. Wattal has worked as a design engineer, business development executive, and analyst. Most recently, he



worked as a senior analyst to analyze sales and pricing data in the healthcare industry. Dr. Wattal brings his industry experience to the classroom in teaching introductory information systems courses. He holds a Bachelor's in Engineering from Birla Institute of Technology and Science Pilani (India), an MBA from Indian Institute of Management Calcutta (India), an MS (Industrial Administration) from Carnegie Mellon University, and a PhD from the Tepper School of Business, Carnegie Mellon University (2007).

Contact information: Sunil Wattal, Assistant Professor Department of Management Information Systems Fox School of Business, Temple University 1810 N. 13th Street. Speakman Hall (006-00) Philadelphia, PA 19122, USA swattal@temple.edu, 215-204-3059

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> For additional information, contact: Institute for Business and Information Technology Fox School of Business Temple University 210 Speakman Hall (006-00) 1810 N. 13th Street, Philadelphia, PA 19122

> > email: ibit@temple.edu web: www.ibit.temple.edu phone: 215.204.5642