Published in Journal of Business and Technical Communication 23(3), (2009), pp. 251-262; doi:10.1177/1050651909333141

Starter Ecologies

Introduction to the Special Issue on Social Software

Clay Spinuzzi
The University of Texas

Published in Journal of Business and Technical Communication 23(3), (2009), pp. 251-262; doi:10.1177/1050651909333141

Starter Ecologies

Introduction to the Special Issue on Social Software

In 2003, I wrote about a widely dispersed community of users who struggled with a specialty database of traffic accidents called PC-ALAS, detailing the ways that they made sense of the database. At the end of the study, I described what I thought was a way-out solution: an online space that functioned as a starter ecology for users to pose questions, answer each other's questions, rate each other's answers, deliberate on and submit requests for features, and even take part in light end-user programming. I called the fictional system Open-ALAS to emphasize the fact that it was an open system, and I cautiously characterized it as utopian. After 5 years, this chapter on Open-ALAS seems embarrassingly naive—not because I was wrong, but because I was right enough that today the solution seems trivial. Someone could put together Open-ALAS in a few hours on Ning, via a Facebook group, or via a FriendFeed room. The workers described in that chapter could easily pick dozens of channels for sharing their expertise. Such open systems are now commonplace and have taken on far more variety than what I envisioned in 2003.

Here is a brief tour of that variety. Instructional videos are now on YouTube. Software documentation is on Scribd and Wikipedia, and actual-use cases for every imaginable configuration and instance of consumer software are everywhere, written by actual users and accessible via Google searches. Collaborative projects are on Basecamp, Wrike, and dozens of other Webbased project management systems. Web-based collaborative writing software is available for free from companies such as Google, Zoho, and Adobe. When you put a networked computer with a browser on every worker's desk, suddenly it becomes feasible—easy, cheap—to use shared online collaborative spaces to perform all sorts of knowledge work, including professional communication.

> This social software drops the costs, increases the scale, and quickens the pace of collaborative work—for good or ill (Benkler, 2006, p. 6).

But more changes are afoot, partially because social software has become so commonplace. One is that organizations themselves are changing. Organizational boundaries are blurring (Castells, 1996; Malone, 2004). Workers are increasingly asked to learn horizontally, across organizational

Published in Journal of Business and Technical Communication 23(3), (2009), pp. 251-262; doi:10.1177/1050651909333141

boundaries as well as vertically, building on knowledge in their own fields, trades, and disciplines (Tuomi-Gro¨hn & Engestro¨m, 2003; see also Amidon, 2005; Amidon & Blythe, 2008; Spinuzzi, 2007b). We are seeing an upsurge in recombinant relationships between employees of the same and different companies (Spinuzzi, 2008; Zuboff & Maxmin, 2004). We are also seeing much more work operating in what Zuboff and Maxmin call federations or organizations of contractors and subcontractors that spontaneously come into being to achieve a specific project before dispersing again. And we are also beginning to see even looser organizations emerging through a phenomenon called coworking (Gallaga, 2008). In coworking, contractors and freelancers arrange to meet with other contractors and freelancers—say, at a coffee shop with free Internet access—and work in the same physical space on their different projects. If you are an activity theorist, you might think of these meeting spaces as the intersecting penumbrae of individuals' work activities. They are working on different projects but in the presence of others in the same or affiliated trades.

Such organizational and postorganizational changes are aided and abetted by many things, including existing organizational looseness in the affected sectors, the nature of knowledge work, and dropping prices in digital technologies. But these changes are increasingly enabled by social software, much of which is free and experimental, much of which is designed for mobile access (via phone or PDA) as well as computer access, much of which allows ambient awareness of potential collaborators' activities.

So what does this relatively sudden shift toward social software mean for professional communicators? How is it currently changing our field, and what changes can we expect in the future? How is this social software being used? How is it changing professional communication practices, environments, expectations, products, ethics, and education? And what will its future impact be? That is what this special issue is about.

What Is Social Software?

According to Wikipedia, ''Social software . . . is normally defined as a range of Web-based software programs. The software allows users to interact and share data with other users'' (Social Software, 2008).

It is often considered bad form to cite Wikipedia in scholarly articles, but citing it nevertheless seems perfectly appropriate here because Wikipedia is a prime example of social software. As Jones (2008) explained, ''Wikipedia articles can be edited by anyone with an Internet connection, regardless of that person's background or expertise, and the wiki software that powers the

Published in Journal of Business and Technical Communication 23(3), (2009), pp. 251-262; doi:10.1177/1050651909333141

site instantly publishes those edits to the Web'' (p. 262). That is, unlike traditional reference sources, Wikipedia is written and edited by a broad cross section of users with no formal affiliation with the publication. In his popular book on social media, Shirky (2008) explained this phenomenon:

> The costs of all kinds of group activity—sharing, cooperation, and collective action—have fallen so far so fast that activities previously hidden beneath that floor are now coming to light. We didn't notice how many things were under that floor because, prior to the current era, the alternative to institutional action was usually no action. Social tools provide a third alternative: action by loosely structured groups, operating without managerial direction and outside the profit motive. (p. 47)

Shirky's (2008) point here, echoed by many others (Benkler, 2006; Li & Bernoff, 2008; Surowiecki, 2005; Tapscott & Williams, 2006), is that as transactional costs to information sharing drop, new forms of information sharing become practical on a large scale. And information sharing covers a lot of ground: It involves sharing original content such as text, music, images, and videos; meta-information for organizing original content, such as bookmarks and notifications of online activities (e.g., what content you have posted, what music you have listened to, and what applications you have used); and location and status information.

Because the transactional costs have dropped so low, we have seen an explosion of innovation in this sector. An incomplete list of social software might include the following: instant messaging, blogs and microblogs, collaborative authoring software, collaborative project and task management software, social networking sites, social bookmarking and tagging sites, lifestreaming applications, location-based systems, rating and reputation systems, and virtual worlds. Most of these services are offered for free, generally supported with advertising. (Some, like Twitter, seem to have no actual revenue model at all.)

Advertisers and marketers, in fact, have become very excited about social software's potential for their professions. The Cluetrain Manifesto (Locke, Levine, Searls, & Weinberger, 2001) set the tone here, characterizing markets in the Internet era as two-way conversations with consumers rather than one-way messages broadcast at consumers. Such a characterization is limiting, but it does point us in the right direction as we begin to examine the impact of social software. Now we need to begin examining the shape of that impact for professional communication.

Published in Journal of Business and Technical Communication 23(3), (2009), pp. 251-262; doi:10.1177/1050651909333141

How Does Social Software Intersect With Professional Communication?

So what is the shape of that impact? How does this explosion of low-cost, high-distribution digital transactions affect our field of professional communication? We can begin to get a sense of this impact by looking at the diverse projects that have begun to examine social software within the field of professional communication.

For instance, several professional communication scholars have examined the use of content-management systems to manage documentation and other forms of textual knowledge (Andersen, 2008; Clark, 2007, 2008; Dayton, 2006; Hart-Davidson, Bernhardt, McLeod, Rife, & Grabill, 2008; Pullman & Gu, 2008). Content-management systems represent one of the most basic and protean forms of social software, since they allow designated members to contribute, share, edit, and reshape content. Although they can be tightly controlled—such as a closed content-management system that functions as an internal knowledge base for an organization—they can also be opened, becoming community sites to which a much broader array of users can contribute. Professional communicators have taken advantage of these capabilities, generating community sites with various scopes and missions (Grabill, 2003; Harrison & Zappen, 2003; Spinuzzi, 2007a; Spinuzzi, Bowie, Rogers, & Li, 2003; Zappen, Adali, & Harrison, 2006; Zappen, Harrison, & Watson, 2008). Instructors are using content-management systems, not just for running Web sites but also for developing complex case simulations (Fisher, 2007). One simplified type of content management, the Weblog (or blog), has become a widely used medium for posting text (Gurak, Antonijevic, Johnson, Ratliff, & Reyman, 2004).

Writing scholars have also been intrigued by wikis such as Wikipedia (Jones, 2008), which are essentially collaborative writing spaces whose contents can be edited by any user. In the past few years, wiki-like collaborative writing spaces have been rolled out by a number of organizations, many of which imitate older office suites (e.g., Google Docs, Zoho Suite, and Adobe's Buzzword word processor). And on another level, short-message writing spaces such as instant messaging (Slattery, 2003) and text messaging (Sun, 2006) are providing new ways for people to communicate both synchronically and asynchronically, within and across organizational boundaries.

Such tools are relatively familiar to us at this point. But we are also seeing some interesting innovations in this space. One is that of *lifestreaming*,

Published in Journal of Business and Technical Communication 23(3), (2009), pp. 251-262; doi:10.1177/1050651909333141

or maintaining a comprehensive list of events in a reverse chronological sequence; such events have been used to provide ambient status information, build personal history, and create online identities through the accumulation of data about online activities. Lifestreaming began as a competitor to the desktop metaphor, one in which information was organized chronologically rather than spatially: Rather than placing documents in folders or on desktops, the Lifestreams software presented documents as they had been created and used over time (Adar, Kargar, & Stein, 1999; Fertig, Freeman, & Gelernter, 1996; Freeman & Gelernter, 1996; Kaptelinin, 2003; Rekimoto, 1999). More recently, lifestreams have become a way to support activity awareness for collaborators (Bianco, 2000; Ganoe et al., 2003; Mehra, 2003). And online, lifestreaming has taken several forms. Microblogging platforms such as Twitter, Pownce, and Plurk have gained widespread use within the past 2 years as ways to publicly update status and carry on conversations while activity aggregators such as FriendFeed, Jaiku, and Facebook's activity stream have provided a way to compile the disparate online social activities in which users engage. Services such as RescueTime, Wakoopa, and Slifeshare monitor system events on individuals' personal computers and compile summaries that can be shared as part of their lifestream. The potential for coordinating work is obvious, and companies such as Microsoft (Cone, 2007) and Trampoline Systems (2008) are bringing work-oriented social networking and aggregation systems to the enterprise. Writing researchers are beginning to think through how visualizations might make sense of such aggregated material (Hart-Davidson, Spinuzzi, & Zachry, 2006).

Another innovation is that of collaborative project and task management software. Web applications such as Basecamp, Wrike, and activeCollab stitch together emergent federations by providing common work spaces for planning, communicating, setting deadlines, and checking project status. I see these systems, or ones like them, becoming increasingly important as work becomes more distributed (Spinuzzi, 2007b; cf. Paretti, McNair, & Holloway-Attaway, 2007; Slattery, 2007; Swarts, 2007).

At this point, however, social software has only begun to be investigated in professional communication. That needs to be changed because social software's impact although it has been relatively subtle up to this point will begin to be felt in a variety of ways—not all of them pleasant.

Published in Journal of Business and Technical Communication 23(3), (2009), pp. 251-262; doi:10.1177/1050651909333141

How Might Social Software Change Professional Communication?

Let me give an illustration. In 1996, Coney and Chatfield analyzed two pieces of software documentation on Microsoft Word: Microsoft's official documentation (Microsoft Word User's Guide) and a third-party manual in a popular series (Word for Windows 6 for Dummies). Not surprisingly, they found significant differences. One of the most intriguing differences was that whereas the official documentation lacked an ''authorial voice,'' the third-party documentation went out of the way to construct an authorial persona: ''The authorial role of Word for Windows 6 for Dummies . . . is loud, entertaining . . . irreverent, sometimes selective, but above all aligned with the reader'' (p. 27). In addition, because the third-party manual was not aligned with the software's publisher, it could openly criticize that software and suggest work-arounds for troublesome features (p. 28). The third-party manual, Coney and Chatfield added, ''invokes a reader role of the active Word user to a much greater extent'' while still playing the role of ''an information gatekeeper or filter'' (p. 27). The role of active user is emphasized, of course, in Carroll's (1990) classic Nurnberg Funnel, in which Carroll advocated writing ''minimal manuals'' that give users the basics and encourage them to explore the software on their own. After all, Carroll pointed out, software documenters simply cannot address every possible user case.

But in an era of social software, every possible user case can be addressed. In a recent study, Novick, Elizalde, and Bean (2007) found that software users reported using printed manuals less frequently than they used search engines (p. 98)—and based on observations, Novick et al. argued that participants used printed manuals even less than they estimated in interviews (p. 100). It is easy to imagine why. Printed manuals represent a substantial cost to write and produce, and it is simply not feasible to hire an army of writers and subject-matter experts to write thousands of pages of cases customized for the many activities in which consumer software (e.g., Microsoft Word) is used. On the other hand, the costs of publishing Web pages, discussion forums, blog comments, and other online social interactions are minimal, and every reader is potentially a documenter. The active users that Carroll (1990) described have become active writers who answer each other's questions about even the most specific and localized cases. And the third-party manual that Coney and Chatfield (1996) described, with its irreverence and willingness to criticize what it explains, is overtaken by the

Published in Journal of Business and Technical Communication 23(3), (2009), pp. 251-262; doi:10.1177/1050651909333141

freewheeling discussions and frank feature comparisons that these active user-writers produce. The user-writers are hardly performing systematic audience analyses or usability tests here; they are conversing. That is to say, like markets, professional communication can be characterized as a conversation in this space—and to a higher degree even than works such as Cluetrain Manifesto (Locke et al., 2001) and Groundswell (Li & Bernoff, 2008) acknowledge.

The challenge for software documenters is not simply to shift from talking at an audience to talking to an audience. The challenge is to figure out how to create and manage conditions for successful professional communication. In my discussion of Open-ALAS in 2003, I characterized this approach as that of developing starter ecologies; now we need more sophisticated thinking about how this sort of substrate formation and community management can be accomplished.

Beyond Starter Ecologies: Examining Social Software in this Special Issue

Some of the groundwork for that more sophisticated thinking is represented in this special issue. In the first article, ‘‘Genre, Activity, and Collaborative Work and Play in World of Warcraft: Places and Problems of Open Systems in Online Gaming,’’ Lee Sherlock examines the ecology of resources that grows around the activity of grouping in a massively multiplayer online role-playing game (MMORPG). Sherlock argues that grouping, an ad hoc distribution of labor for gaming parties, is made possible by the fact that World of Warcraft is treated as an open system. At the same time, the MMORPG’s publisher limits the openness of the system in order to protect its intellectual property and to put the brakes on disruptive actions. Sherlock foregrounds how power and agency are constructed in such spaces.

The second article, Jeff Rice’s ‘‘Networked Exchanges, Identity,Writing,’’ turns to the question of identity. In professional communication as elsewhere, we are seeing an upswing in horizontal learning (i.e., learning across disciplines, fields, trades, and activities). That upswing is partially precipitated by dialogic interaction in networked electronic spaces such as message boards, blogs, and blog carnivals. That dialogic interaction is characterized by the accumulation of responses: Participants reply to messages, comment on blogs, and write their own blog posts in response to others. In that accumulation of responses, authors form identities. In examining

Published in Journal of Business and Technical Communication 23(3), (2009), pp. 251-262; doi:10.1177/1050651909333141

these identity-forming dialogues, Rice argues for a rhetoric of networked exchanges that focuses on the response. Rice draws on several examples to trace this rhetoric, concluding with a call for response-based communication practices.

Stefanie Panke and Birgit Gaiser look at a different kind of accumulation in the third article, ‘‘‘With My Head Up in the Clouds’: Using Social Tagging to Organize Knowledge.’’ They examine social tagging, in which individuals characterize generally accessible information (e.g., Web pages, photos, and music) with words or phrases. But what are the benefits and limitations of tagging as a tool for shared and personal knowledge organization? How can social tagging enhance technical communication and vice versa? Panke and Gaiser explore motives and usage patterns for social tagging services through qualitative interviews and an online questionnaire. They also draw a variety of lessons for technical communicators, particularly in terms of shared understandings.

Finally, in ‘‘Integrating Social Media Into Existing Work Environments: The Case of Delicious,’’ Karl Stolley looks at a specific instance of tagging. Drawing on activity theory, he examines the social bookmarking site Delicious, using it to present conceptual foundations and concrete steps that professional communicators can take to more fully participate in the design of their own tools, particularly their own communication systems and software. Stolley argues that technical communicators must not only use but also modify and customize their social media.

The special issue ends with reviews of four books representing different takes on social media. Huatong Sun reviews *Digital Korea: Convergence of Broadband Internet, 3G Cell Phones, Multiplayer Gaming, Digital TV, Virtual Reality, Electronic Cash, Telematics, Robotics, E-Government and the Intelligent Home*, by Tomi Ahonen and Jim O’Reilly; Mike Edwards reviews *The Wealth of Networks: How Social Production Transforms Markets and Freedom*, by Yochai Benkler; Douglas M. Walls reviews *Acting With Technology: Activity Theory and Interaction Design*, by Victor Kaptelinin and Bonnie A. Nardi; and John M. Jones reviews *Structures of Participation in Digital Culture*, edited by Joe Karaganis.

Even Farther Beyond Starter Ecologies: Social Software Beyond This Special Issue

So this special issue represents a good start in terms of thinking through social software’s possible impacts on professional communication. But one

Published in Journal of Business and Technical Communication 23(3), (2009), pp. 251-262; doi:10.1177/1050651909333141

special issue is not enough: As consumers become more comfortable as producers, as social capital becomes more generally accepted, and as more networked tools make producing and sharing information even easier and more varied, social software will affect professional communication far more deeply. To put it bluntly: How do we react when great numbers of consumers become involved in collaboratively annotating the entire world?

The question is hardly academic, and we can think of several present examples, including Wikipedia, Twitter, and Google Maps mashups. But let us look at something that could be more concrete, more broadly used, and more quotidian. In a video that made the rounds in September 2008, Tonchidot CEO Takahito Iguchi unveiled the startup's mobile social tagging product for Apple's iPhone: Sekai Camera. As TechCrunch blogger Schonfeld described it, the product allows people to use the iPhone as a sort of magic lens: Activate the iPhone's camera, look at the screen, and see information superimposed over the iPhone's view of the world:

> The demo starts with a video showing how Sekai Camera uses the iPhone's camera viewfinder to overlay tags and information from a database onto objects in the real world. . . . Pan the [iPhone's] camera around, and different tags will pop up for stores, products, even voice or text notes left by your friends. ''Look up, don't look down,'' Iguchi kept telling the audience. Sekai Camera includes an ''Air Filter'' that lets you see just the tags you are interested in. It is designed to be an interface between the real world and the Web. (2008)

Similar software is being developed for Google's Android operating system for mobile devices. This kind of software leverages the built-in cameras, persistent Internet connections, high-end processing capability, and mobility of devices such as the iPhone and HTC's G1, producing an augmented reality that is communally annotated (i.e., socially documented and mediated) by an ecology of texts to which any user can contribute. We can imagine how such capabilities could affect professional communication. Or at least I think we can. But we also need to begin thinking through what such capabilities might mean to our documentation processes, our curricula, our pedagogies, our theories, our research methods, our understanding of texts. Perhaps this special issue can spark some ideas as we do that work.

Clay Spinuzzi
University of Texas at Austin

Published in Journal of Business and Technical Communication 23(3), (2009), pp. 251-262; doi:10.1177/1050651909333141

References

Adar, E., Kargar, D., & Stein, L. A. (1999). Haystack: Per-user information environments. In CIKM'99: Proceedings of the Eighth International Conference on Information and Knowledge Management (pp. 413-422). New York: ACM.

Amidon, S. R. (2005). Writing the learning organization: A framework for teaching and research. Business Communication Quarterly, 68, 406-428.

Amidon, S., & Blythe, S. (2008). Wrestling with Proteus: Tales of communication managers in a changing economy. Journal of Business and Technical Communication, 22, 5-37.

Andersen, R. (2008). The rhetoric of enterprise content management (ECM): Confronting the assumptions driving ECM adoption and transforming technical communication. Technical Communication Quarterly, 17, 61-87.

Benkler, Y. (2006). The wealth of networks: How social production transforms markets and freedom. New Haven, CT: Yale University Press.

Bianco, M. (2000). An interface for the visualization and manipulation of asynchronous collaborative work within the DISCIPLE system. Unpublished master's thesis, Rutgers, New Brunswick, NJ.

Carroll, J. M. (1990). The Nurnberg funnel: Designing minimalist instruction for practical computer skill. Cambridge, MA: MIT Press.

Castells, M. (1996). The rise of the network society. Malden, MA: Blackwell.

Clark, D. (2007). Content management and the production of genres. In D. G. Novick, & C. Spinuzzi (Eds.), SIGDOC'07: Proceedings of the 25th annual ACM international conference on Design of communication (pp. 9-13). New York: ACM.

Clark, D. (2008). Content management and the separation of presentation and content. Technical Communication Quarterly, 17, 35-60.

Cone, E. (2007). Will Microsoft become Facebook for the enterprise? Retrieved October 15, 2008, from http://www.cioinsight.com/c/a/Past-News/Will-Microsoft-Become-Facebookfor-the-Enterprise/

Coney, M. B., & Chatfield, C. S. (1996). Rethinking the author-reader relationship in computer documentation. Journal of Computer Documentation, 20, 23-29.

Dayton, D. (2006). A hybrid analytical framework to guide studies of innovative it adoption by work groups. Technical Communication Quarterly, 15, 355-382.

Fertig, S., Freeman, E., & Gelernter, D. (1996). Lifestreams: An alternative to the desktop metaphor. In CHI'96: Conference companion on Human factors in computing systems (pp. 410-411). New York: ACM.

Fisher, D. (2007). CMS-based simulations in the writing classroom: Evoking genre through game play. Computers and Composition, 24, 179-197.

Freeman, E., & Gelernter, D. (1996). Lifestreams: A storage model for personal data. SIGMOD Rec, 25, 80-86.
Gallaga, O. L. (2008). Instant co-workers: Austin telecommuters soon will have places to go when camaraderie of the office is missing. Retrieved July 15, 2008, from http://www.statesman.com/search/content/life/stories/other/07/06/0706coworking.html
Ganoe, C. H., Somervell, J. P., Neale, D. C., Isenhour, P. L., Carroll, J. M., & Rosson, M. B., et al. (2003). Classroom bridge: Using collaborative public and desktop timelines to support activity awareness. In UIST'03: Proceedings of the 16th Annual ACM Symposium on User Interface Software and Technology (pp. 21-30). New York: ACM.
Grabill, J. T. (2003). Community computing and citizen productivity. Computers and Composition,20, 131-150.
Gurak, L., Antonijevic, S., Johnson, L., Ratliff, C., & Reyman, J. (Eds.). (2004). Into the blogosphere:Rhetoric, community, and culture of weblogs. Retrieved July 14, 2008, from http://blog.lib.umn.edu/blogosphere/
Harrison, T. M., & Zappen, J. P. (2003). Methodological and theoretical frameworks for the design of community information systems. Journal of Computer-Mediated Communication,
8. Retrieved from http://www3.interscience.wiley.com/journal/117979306/toc?func¼showIssues&code¼jcmc
Hart-Davidson, W., Bernhardt, G., McLeod, M., Rife, M., & Grabill, J. T. (2008). Coming to content management: Inventing infrastructure for organizational knowledge work. Technical Communication Quarterly, 17, 10-34.
Hart-Davidson, W., Spinuzzi, C., & Zachry, M. (2006). Visualizing writing activity as knowledge work: Challenges & opportunities. In SIGDOC'06: Proceedings of the 24th Annual International Conference on Design of Communication (pp. 70-77). New York: ACM Press.
Jones, J. (2008). Patterns of revision in online writing: A study of Wikipedia's featured articles. Written Communication, 25, 262-289.
Kaptelinin, V. (2003). UMEA: Translating interaction histories into project contexts. In CHI'03: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (pp. 353-360). New York: ACM.
Li, C., & Bernoff, J. (2008). Groundswell: Winning in a world transformed by social technologies. Cambridge, MA: Harvard Business School Press.
Locke, C., Levine, R., Searls, D., & Weinberger, D. (2001). The Cluetrain Manifesto: The end of business as usual. New York: Perseus.

Malone, T. W. (2004). The future of work: How the new order of business will shape your organization, your management style and your life. Boston: Harvard Business School Press.
Mehra, P. (2003). Interaction streams: An approach for workspace management in collaborative environments. Unpublished master's thesis, Rutgers, New Brunswick, NJ.
Novick, D. G., Elizalde, E., & Bean, N. (2007). Toward a more accurate view of when and how people seek help with computer applications. In SIGDOC'07: Proceedings of the 25th annual ACM International Conference on Design of Communication (pp. 95-102). New York: ACM.
Paretti, M. C., McNair, L. D., & Holloway-Attaway, L. (2007). Teaching technical communication in an era of distributed work: A case study of collaboration between U.S. and Swedish students. Technical Communication Quarterly, 16, 327-352.
Pullman, G., & Gu, B. (2008). Guest editors' introduction: Rationalizing and rhetoricizing content management. Technical Communication Quarterly, 17, 1-9.
Rekimoto, J. (1999). Time-machine computing: A time-centric approach for the information environment. In UIST'99: Proceedings of the 12th Annual ACM Symposium on User Interface Software and Technology (pp. 45-54). New York: ACM Press.
Schonfeld, E. Tonchidot madness: The video. Retrieved October 22, 2008, from http://www.techcrunch.com/2008/09/17/tonchidot-madness-the-video/
Shirky, C. (2008). Here comes everybody: The power of organizing without organizations. New York: Penguin.
Slattery, S. (2007). Undistributing work through writing: How technical writers manage texts in complex information environments. Technical Communication Quarterly, 16, 311-325.
Social Software. (2008). Wikipedia, the free encyclopedia. Retrieved July 15, 2008, from http://en.wikipedia.org/wiki/Social_software
8 Spinuzzi, C. (2003). Tracing genres through organizations: A sociocultural approach to information design. Cambridge, MA: MIT Press.
Spinuzzi, C. (2007a). Accessibility scans and institutional activity: An activity theory analysis. College English, 70, 181-193.
Spinuzzi, C. (2007b). Introduction to TCQ special issue: Technical communication in the age of distributed work. Technical Communication Quarterly, 16, 265-277.
Spinuzzi, C. (2008). Network: Theorizing knowledge work in telecommunications. New York: Cambridge University Press.
Spinuzzi, C., Bowie, J., Rogers, I., & Li, X. (2003). Open systems and citizenship: Developing a departmental website as a civic forum. Computers and Composition, 20, 168-193.

Sun, H. (2006). The triumph of users: Achieving cultural usability goals. Technical Communication Quarterly, 15, 483-504.
Surowiecki, J. (2005). The Wisdom of Crowds. New York: Anchor.
Swarts, J. (2007). Mobility and composition: The architecture of coherence in non-places. Technical Communication Quarterly, 16, 279-309.
Tapscott, D., & Williams, A. D. (2006). Wikinomics: How mass collaboration changes everything. New York: Portfolio.
Trampoline Systems. (2008). SONAR Dashboard. Retrieved October 15, 2008, from http://www.trampolinesystems.com/product/SONARþdashboard/overview
Tuomi-Gro¨hn, T., & Engestro¨m, Y. (Eds.). (2003). Between school and work: New perspectives on transfer and boundary crossing. Boston: Pergamon.
Zappen, J. P., Adali, S., & Harrison, T. M. (2006). Developing a youth-services information system for city and county government: Experiments in user-designer collaboration. In dg.o'06: Proceedings of the 2006 International Conference on Digital GovernmentResearch (pp. 259-264). New York: ACM.
Zappen, J. P., Harrison, T. M., & Watson, D. (2008). A new paradigm for designing e-government: Web 2.0 and experience design. In dg.o'08: Proceedings of the 2008 International Conference on Digital Government Research (pp. 17–26). Digital Government Society of North America.
Zuboff, S., & Maxmin, J. (2004). The support economy: Why corporations are failing individuals and the next episode of capitalism. New York: Penguin Books.