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Field Exam 2

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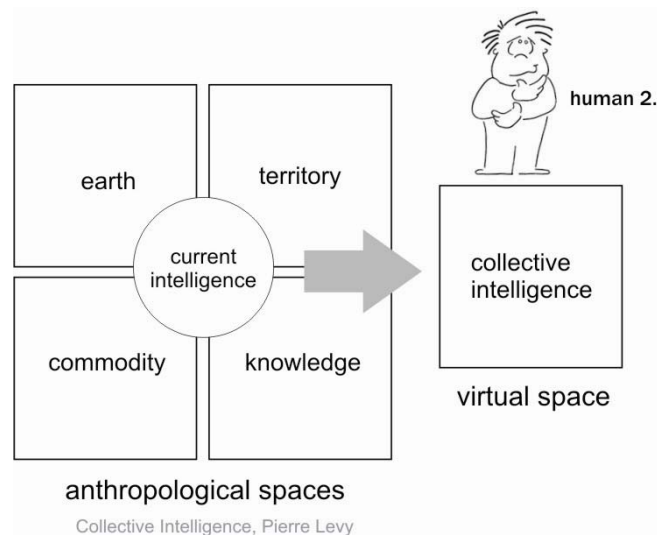
What is networked collaboration and how can digital media better facilitate creative interaction and productive collaboration?

There are three predominant questions in Professor Terry's question: What is networked collaboration and how does it relate to social media? What is the difference between networked collaboration and other kinds of collaboration? And, how can these networks better facilitate creative interaction and productive collaboration? I will begin with a Wikipedia definition: Collaboration is a recursive process where two or more people or organizations work together toward an intersection of common goals. Add computer-mediation to the collaborative process and you have the definition of networked collaboration that I will use throughout this paper. To further establish a definition of social networks and the connection to social media, I've quoted various authors and cultural observers such as Sheizaf Rafaeli, Daphne Raban, and Yoram Kalman who describe social networks as "Internet-based attempts to map the web of affiliations or relations between people." (Amichai-Hamburger 82) Tapscott and Williams quote the social scientist Danah Boyd, at the University of Berkeley, as she claims social networks are "about reclaiming private space." Boyd continues, "The new private spaces are increasingly found online, where young people gather en masse, network with peers, and make shared spaces of their own. It's like a bedroom with

closed doors. Except that on MySpace, they can invite one thousand friends in.” (Tapscott 48) Finally, I add Andrew Keen’s cynical analysis that social networks “exist so that we can advertise ourselves...,” he explains the reason for such popularity of these sites is an “infinite desire for personal attention...” (Keen 7) For the purposes of this paper, networked collaboration, digital collaboration, and social networks will be used interchangeably. I will use the general term, social network, to describe the act of gathering and collaborating online, popularized by the social media movement.

In 1999, the MySpace web site was launched and it wasn’t until 2004 that the term Web 2.0 became commonly used describing a virtual space that encouraged personal expression, supported group interaction and multi-user collaboration. Facebook followed and the digital community epoch was clearly apparent. The Wikipedia project, a digital collaborative model, was launched in 2001 and the practical research began as scholars and social commentators described the digital communities and collaborative spaces in such books as *Wikinomics* by Don Tapscott and Anthony Williams, and *Everything is Miscellaneous* by David Weinberger.

Pierre Levy wrote his book, *Collective Intelligence* in 1995, eight years before the social networking site, MySpace was launched and though his views are focused on a virtual space, the internet in general, he is describing the social network environments and collaborative efforts that are occurring within the current social technologies. He describes four anthropological, or mind spaces: earth, territory, commodity, and knowledge. (Levy 145)



Levy uses these anthropological spaces to describe the flow of intelligence within cultures and how through digital collaboration, a collective intelligence emerges which I have illustrated as a fifth space, labeled collective intelligence. Levy described the internet as dynamic with a rush of visually stimulating information, but he never could have imagined MySpace and the virtual portal these sites have afforded. Levy envisioned a democratic, more intelligent virtual space and probably never considered the blast of invasive advertising that is comingled among the sites that displays our collective intelligence. In consideration of Levy's work and his four anthropological spaces, I will refer to five spheres of influence as I explore the differences between networked collaboration and conventional, face-to-face interactions. Also, Levy provides a foundational definition of web 2.0, the space where users are able to interact and collective intelligence is gathered; often with a digital presence as an avatar. I've labeled this new media relationship and interactive user as human 2.0.

Although, as soon as the computer connected two or more people and electronic networks started forming, social media began; I would argue that the social media movement

began in earnest with the introduction of the first dedicated social network, Friendster in 2002. The distinction from previous web sites and the evolution from web 1.0 to 2.0 can be described in a word, interactivity. The stated objective of these social spaces is to communicate with “friends” within personally formed communities. Social networks facilitate activities that allow users to digitally express themselves, interact by posting comments, and connect with others in ways that had not been possible. I believe the field of networked collaboration is still undeveloped and although collaboration occurs within social media, such as rating systems, sharing of files and images, as well as synchronous communication, the common goals as defined by the Wikipedia definition of collaboration, appear as common interests. Social networks have enhanced expression, encouraged connectivity, and enabled expanded forms of communication, but creativity and conceptual creations do not appear to be enhanced by only digital connectivity or electronic sharing.

### Networked Collaboration

In my estimation, there are three areas that characterize a difference between networked collaboration, or digital collaboration, and person-to-person interactions. These areas are sphere of influences, facilitation of communication, and technology assisted connectivity. In many ways collaboration on the internet, which I will call digital collaboration, is similar to non-digital, person-to-person collaboration that occurs off-line. Similar techniques and considerations involve group dynamics, experiential learning and team building concepts commonly used with groups working toward a common goal. I note these similarities, because they provide opportunities to improve networked collaboration and enhance the social media

environment, but for this paper I'll address the three areas that distinguish the differences of digital collaboration.

### Spheres of influence

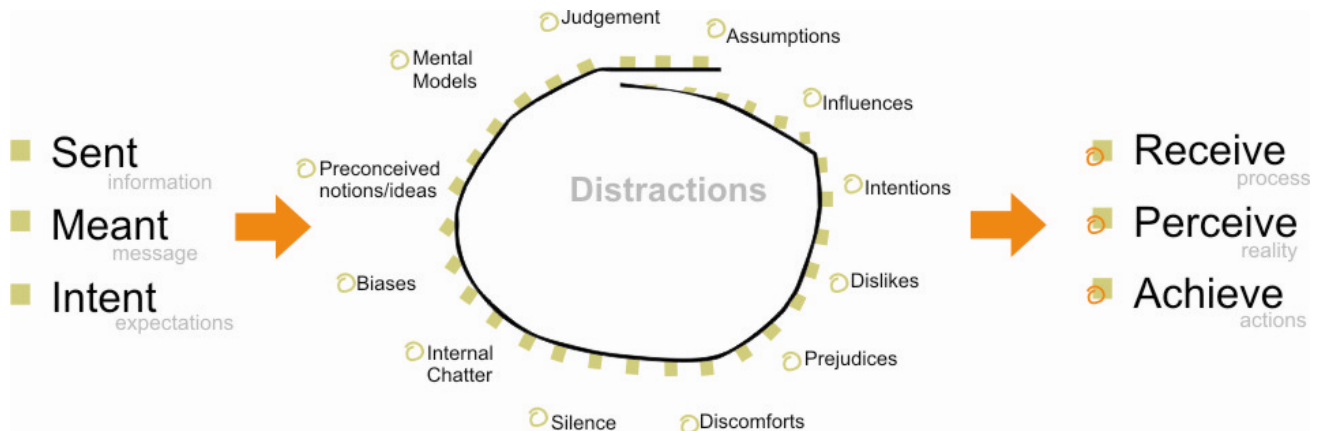
Reframing Pierre Levy's four anthropological spaces, I have identified five spheres of influence which can be easily defined and consequently more pronounced within a digital space, adding the virtual space, collective intelligence. Currently, Levy's vision and collective intelligence model is best represented by web sites such as Wikipedia and Google, and social networks such Facebook, Flickr, MySpace, and many others. Although, each web site effectively addresses one of Levy's spaces, none adequately encapsulates the five spaces. Even with the current deficiencies, digitally, networked collaboration is still the best forum for combining and cultivating the influences of these spaces. Most people act from a place of predominance from any one or two spheres off-line. A digital environment can be designed to fully immerse a person in all states. This promotes the line of reasoning that collaboration can be better with greater enrollment from any participant. Such immersion would present the opportunity to fully engage participants. In addition to full-immersion, a virtual environment affords the ability to manage or design the spaces and control features that might better facilitate better collaboration. For example, Amazon attempts to control the commodity sphere by suggesting products that might appeal to buyers by using their purchasing history and comparing these transactions to other similar histories. In this fashion, Amazon attempts to create a familiar commodity space and influence the actions of visitors.

David Weinberger, coauthor of the *Cluetrain Manifesto*, said it best when he said:

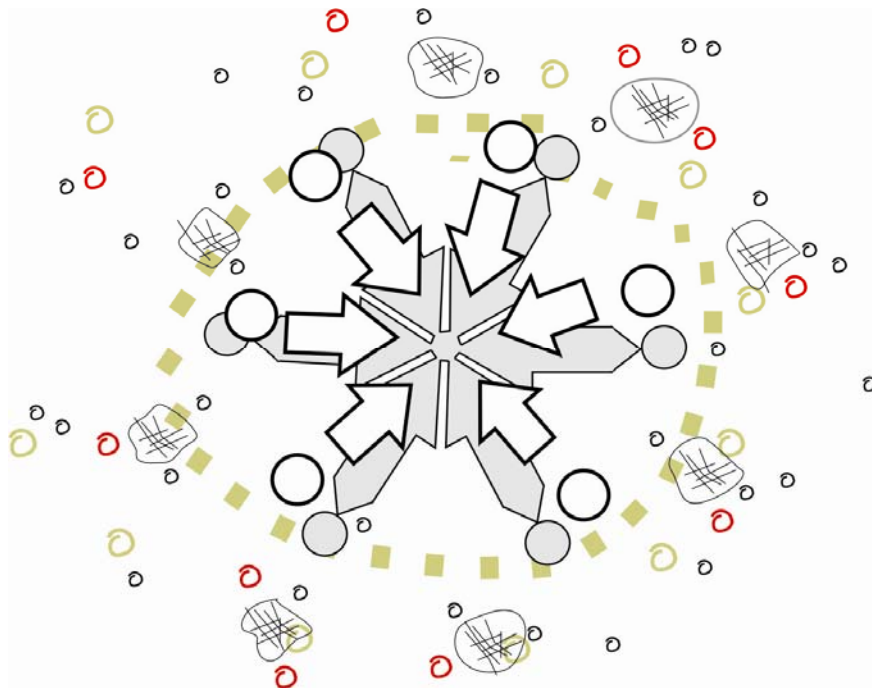
Now, as our social networks create third-order front pages unique to our group's interests, we at least get past the oft-heard objection that what Nicholas Negroponte called *The Daily Me* fragments our culture into isolated individuals. In fact, we are more likely to be reading *The Daily Me, My Friends, and Some Folks I Respect*. We're not being atomized. We're molecularizing, forming groups that create a local culture. (Weinberger 131)

### Facilitated communication

To illustrate the impact of a digitally based, networked collaborative environment, it is important to show the complexities of communication and elements involved when attempting to send and receive a message. The following communication model presents a variety of elements described as distractions that can interfere with the intended message and influence the information received. The distracting elements are only one factor that influences the initial message. The sender's intentions affect the message and then the receiver's perceptions can alter the same message resulting in more variations. Communication in any form is influenced by implicit and explicit variables that alter the message. The diagram below shows some of the elements involved in the process of sending and receiving a message.



Beyond common elements that affect communication, it is important to identify what type of communication is best suited for the task at hand. In a classroom setting, a lecture is often the most effective way to deliver a message, and the courtroom is best served with a more argumentative approach as parties attempt to sway a judge and jury. In a collaborative environment, I would argue the ideal form of communication is a disciplined dialogue that is described by David Bohm in his book, *On Dialogue*. Bohm describes a communication process where two conversations are occurring simultaneously: the dialogue and the meta-dialogue. The word dialog, comes from the Greek word dialogos, which literally means, "To speak with each other." In dialogue the participants do not try to convince others of a point of view, but share thoughts, ideas, perspectives in an effort to create a deeper understanding and generate new knowledge or realities. From a social network perspective, Bohm dialogue is an effective approach to collect and synthesize information. The four elements to Bohm dialogue are: Suspension of judgement, listening, identification of assumptions, and inquiry and reflection.



Combining the elements that influence communication and a visual diagram of dialogue, I created the model above. The model represents six participants and their “shadow” self participating in the meta-dialogue. Participants are immersed in preconceived notions, ideas, biases, raw data, and obtained knowledge that all contribute to our sense of identity and consequently the way we communicate and act. Bohm dialogue encourages the communicator to slow down and recognize these influences and interact from a place of connection and collaboration and not from a position of self promotion and false beliefs or assumptions. The model represents the influencing factors, encircled by societal norms and values which are strong influences. As illustrated, communication is complex and elements that affect sending and receiving a message are ever present. Similar to static on a cell phone and the common drops associated with wireless communication, people cope with less than ideal communication. I argue that cell phone users are tolerant to poor “reception” and incomplete messages being received between callers because expectations are low and the alternative, continually clarifying or asking the sender to repeat themselves, is too much trouble. Effective communication practices such as Bohm dialogue is slow, arduous and difficult to achieve. The integrity of the message does not appear to be a priority, or callers would demand better reception from their wireless phone providers or slow down the conversations. But, public expectations and low standards for message clarity is not a reason to ignore effective communication practices. Improved communication is a key element to a better collaborative model. The quality of the message sent or received; as well as data transferred, is vital to effective collaboration. Networked collaboration provides an ideal environment to address communication issues and poor interaction habits. The internet is the perfect platform, where

effective communication can be facilitated and tools designed to consider and practice Bohm's four elements of dialogue. Networked collaboration has the potential to promote dedicated dialogue, and improve communication techniques, with an interface that facilitates productive interactions. In person, face-to-face collaboration is a difficult process, and even more complex when considering the elements that influence whether a message is received as intended, a networked collaborative environment can provide interfaces and applications designed to consider these distractions.

#### Technology assisted connectivity

A successful social network must be designed to facilitate effective communication, inspire users to participate, and encourage members to fully enroll in the process. Beyond the user-centric design, effective features are found on other social networks and a synthesis of these technologies can create a robust environment that enables productive collaboration. The ideal social network would combine features of other social networks and web sites such as the organizational properties of craigslist and the collaborative and information collection model of Wikipedia. In face-to-face interactions, participants rarely take the time to get acquainted or find out details that benefit the interaction. A dedicated effort to collaborate will always improve with subtle details such as a person's background and history that influences their decisions and consequential actions. Information collection is an easy task and valuable resource that would enhance the collaborative process. Sites such as Amazon and eharmony utilize technology that effectively captures the users' information and links them with products, services and other participants based on personal preferences. This would be valuable in

identifying relevant relationships and meaningful connections. Google provides a search model that is necessary to navigate any large database, while MySpace, Facebook and Flickr provide insight into successful personal web spaces and gallery type displays of work that user expect when presenting their varied profiles. Finally, communication necessary for a collaborative environment will utilize RSS feed technology, blog capabilities and web site models such as twitter to build strong, connected communities.

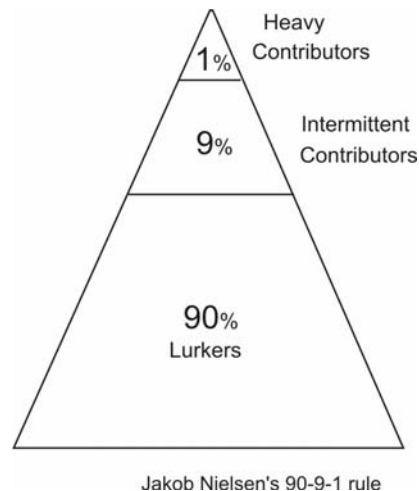
### Benefits of Networks

In answering the question how networked collaboration can better facilitate creative interaction and improve collaboration I consider three specific areas: cooperation, communication, and coordination. Cooperation describes the participant's state of mind and willingness to engage in the process and interact with other participants. Communication describes the means of conveying and effectively delivering a message, and coordination considers the ability for participants to effectively interact and work together.

To accomplish a collaborative environment, collective intelligence, and informed community as the Wikipedia project has achieved, a diversity and independence is required by participants. On the other hand, less independence and a connectivity of purpose and commonalities are key elements to encourage productive participation as displayed on such sites as Facebook and MySpace. In addition, research shows that most internet users are distant observers who rarely participate. Current technologies capitalize on any one human factor, but for successful, productive collaboration, all variables must be considered. I believe an effective collaborative network is possible by reframing the relationships of interaction and

redirecting emphasis to capitalize on human capital that will create strong networks. It is necessary, and beneficial, to redefine conventional collaborative ideas to fit a virtual environment. This entails capturing the intelligence of diversity, reframing active roles and non-active roles of internet users, and motivating participation by formulating shared commonalities. Communication issues could be addressed by designing interfaces that facilitate information and productive interactions. Current technologies could be positioned to enable participants to effectively interact and work together. Attention must be paid to user-centric, environmental designs that anticipate users' perceptions, implicit and explicit distractions; as well as, the user's state-of-mind that affect one's willingness to engage in the process. Examples of new thinking necessary to facilitate such change are full-representation opposed to equal-participation, relevance in place of interests, and new definitions of "enrolled," "participation," and "contributor" which indicates a type of information instead of a degree of contribution.

One of the greatest challenges to accomplishing all three areas of collaboration is what Jakob Nielsen describes as his participation model, the 90-9-1 rule. (Nielsen 1) Whittaker, Terveen, Hill, and Cherny first explored this inequality in their article titled *The Dynamics of Mass Interaction*. In Nielsen's article titled, *Participation Inequality: Encouraging More Users to Contribute*, he describes the internet as a collaborative environment that is roughly controlled by 10% of the users which he labels "heavy contributors" and "intermittent contributors" and the other 90% as "lurkers," who never actively participate in blog postings, social networks, and newsgroup discussions. (Nielsen 1)

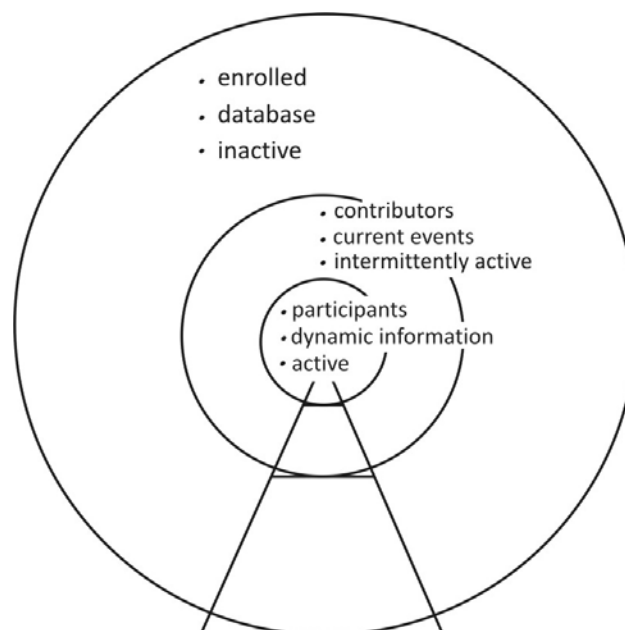


The challenge as posed by Nielsen's 90-9-1 rule is encouraging greater participation of the lurkers and better representation of the internet population as a whole. Nielsen states that such an inequality cannot be overcome and at best, lurker's participation might increase a small percentage. (Nielsen 4)

Participation is a key element to collaboration and assuming Nielsen's negative forecast of not being able to increase participation on the web is accurate; the idea of digital collaboration seems weak at best, and practically impossible. An aside, and one reason that I am confident a design solution can play an important role in creating new collaborative solutions is Nielsen's very characterization of a small representational group which influences most web design. This small percentage of heavy contributors makes up the current demographic, providing feedback and the users interacting with the communication tools and inevitably providing the information used to design new technologies. Designers must look beyond the heavy contributors to the silent majority of lurkers to gain valuable insights. This

assumption is derived from observing the dynamics of any group interaction, online or off, and the natural tendencies of participants to fill roles as described by Nielsen. The natural tendency is to stay removed from the process unless highly motivated. My experience has shown that acknowledging and engaging these “lurkers” pulls them into the process and encourages a fuller participation by the group.

The first step in realizing the benefits of networked collaboration is beginning with a new understanding of what distinguishes effective collaboration. Instead of equal participation, the focal point must be accomplishing a commonly defined objective. Full representation as opposed to equal participation and a diverse collection of individuals as opposed to homogeneous groups or over-representation from any one sect can promote effective collaboration. As illustrated in the model below, I would expand and reframe Nielsen’s 90-9-1 formula and use the seemingly inequality of participation as the necessary formula for successful collaboration.



Using Nielsen's distinction of internet users; heavy contributor, intermittent contributor, and lurker, I have defined the participants' roles as participants, contributors, and enrolled, respectively. The distinctions are important in consideration of creating a working collaboration model. While some might focus on changing the scale of participation by any one group, the easiest solution is to understand the value of each position and create the network accordingly. Although, the enrolled group might not actively participate, they supply a valuable data base and inadvertently provide information that makes the network smarter. Currently, social media captures information from this demographic, but this data can be better tailored to enhance the whole process. Contributors are going to participate less than the predominant group, but can be used as super barometers and human gauges when they are inspired or moved to participate, the data should be flagged as worthy of attention. This is the group that gives big, long-term, industry changing feedback to effective design and useful features. The participants are early adopters and users who have found a need. They reinforce the mission of any given network and indicates whether the direction of the network is on course. This demographic is important, but not the only voice that should be considered in creating the ideal collaborative environment. Participants provide instant feedback and are valuable for short-term decisions, but the goal is to design with an eye to the larger population.

### Cooperation

One key to successful cooperation depends on a social network engaging participants and reaching users who share a common purpose. This is an effective way to move Lurkers to intermittent or heavy contributors. The benefit of a social network on the internet is a capacity to reach large numbers of people, and then facilitating the formation of communities with

common interests and goals. Such communities share a special connection and form stronger bonds that build the foundation for strong collaboration. Don Tapscott describes the benefits of the internet as, “the ability to pool the knowledge of millions (if not billions) of users in a self-organizing fashion demonstrates how mass collaboration is turning the new Web into something not completely unlike a global brain.” (Tapscott 41)

Social media affords further reach and allows greater numbers of participation, in theory this complements a collaborative model, but in practical terms, the greater the number of participants, the more complicated the collaborative process becomes. Group dynamics and general idiosyncrasies make full participation and equal representation difficult at best. Similar to a democratic model, for an efficient and effective process, participants must assume roles that promote the process over individual preferences and the equality of participation often comes in a common experience and a shared mission and not equal levels of participation. In this manner, Nielsen’s model of disproportionate participation benefits the process. An effective digital collaborative environment must provide multiple roles, multiple degrees of participation and many levels of success. All formulated around a common theme or goal that motivates organization.

James Surowiecki in his book, *The Wisdom of Crowds*, describes a collective intelligence that outperforms any one expert and wisdom unique to groups (Surowiecki 32). One of the benefits of the internet and a digital environment is the ability to reach a greater number of individuals and more diverse representation of people, which is ideal for the group intelligence that Surowiecki describes. Pierre Levy states in his book *Collective Intelligence*, “Nobody knows

everything, and everybody knows something, all knowledge resides in humanity” (Levy 13), which aptly explains the dynamics of Surowiecki’s claim. The internet is an ideal environment to mine such a higher intelligence and collective knowledge.

A collaboration paradox arises as diversity and independence are necessary for collective wisdom, described by Surowiecki; while on the other hand, shared purpose and commonality are vital for effective collaboration. The ideal collaborative environment must consider independent ideas and personalities to mine the full breadth of knowledge while designing a space that facilitates a shared purpose. Although, such inequity in representation creates a “biased understanding of the community” (Nielsen 2), it can still be an effective model for collaboration. In 2006 Nielsen cited 1.1 billion internet users, with such a large pool of participants; even one percent can provide an accurate representation of the larger population. Even though the lurkers might not actively participate, their contribution is populating the pool of data and collective knowledge.

## Communication

Networked collaboration facilitates communication in many of the obvious manners such as unlimited reach, synchronous connectivity, and digital expression including dynamic text, graphical enhancements, video and audio capabilities. The ability to connect outside of time and space constraints is greater than any time in history. The interesting aspect of communication that facilitates collaboration is the possibilities for enriched dialogue and efficient exchanges capable of emitting and receiving messages as intended. Perception will always be a factor as long as humans are involved, but computer-mediated communication with virtual collaborative environments offers opportunities to create tools that can make

communication more efficient and collaboration more productive. Convention seems resigned to the fuzzy logic of human perception as illustrated by David Weinberg's quote, "Computers deal only with what they've been told, not with what's been left unsaid. And that is causing a disruption of the delicate ecology of the implicit and explicit." (Weinberg 154) Weinberg emphasizes this point by stating, "Implicit context is fragile. It is easily lost as culture moves on." (Weinberg 153) But, I remain optimistic that greater consideration can be given to less fuzzy communication with attention to the disruptions and distractions as illustrated in the Bohm communication model. Effective communication and collaboration that produces creative ideas or useful objectives are not easy, but a facilitated environment, designed and tailored to assist the collaborative process, has the potential to make things easier.

#### Coordination

Coordination is an integral part of the collaboration process. Many aspects of collaboration are reproducible functions that must occur in any event and with any participants. These predictable actions can be facilitated efficiently and effectively by a well-designed application. Current technologies can provide the solutions to the three coordination issues I've identified. The three areas that coordination addresses are volume, decentralization, and flexibility.

As stated, a digital network has the capability to access mass volumes of data and reach an unlimited amount of participants. As Dana Boyd said, MySpace is like a bedroom where anyone can invite one thousand friends to visit. The ability to reach, connect, and interact with any amount of participants is a valuable attribute for the digital networks.

Decentralization and features that encourage participation are attributes better facilitated by a programmed application. The ideal collaborative environment excels without hierarchies and dominating figures, but this doesn't mean a facilitator or mediator isn't helpful. A network designed for collaboration would serve the function of a facilitator, devoid of human emotions or common communication distractions, the system could form and adapt to best practices that complement the participants and their stated objectives.

Flexibility is a trait that allows the volume of participants to effectively collaborate and the decentralized model of internet connectivity to flourish. One element that will never be designed out the process is the human factor and this is where well conceived applications can anticipate needs, consider alternatives, and even develop systems that are able to adapt to human elements as they interact and respond to the participants' needs. Flexibility in a networked collaborative environment is simply a design feature that improves the process: It is never an inconvenience as can be the case in some human facilitation.

## Conclusion

As the web evolves and internet applications broaden in reach and services, one trend that continues to strengthen is the popularity and sophistication of social networks. I would argue the most important indicator that social networks and collaborative environments are still evolving is to look at the primary function of current social media. Participants are able to communicate as creative expression is expanding, but the common goals are still not clearly defined. The design emphasis is to attract more users, not enhance the user's experience for a better quality product. The most successful collaborative effort is the Wikipedia project with a clear mission and user interface that promotes its cause, but social networks are still searching

for their higher purpose. MySpace and Facebook appear lost in their success, searching for the next game or gimmick that lures more members or entices greater participation. The field is open for the media that facilitates a broad reach, personal touch, comprehensive database, and personal connectivity resulting in an efficient, effective collaborative effort. To move current social media from simply self-expression sites and links to friends, three areas will need to be addressed: cooperation, communication, and coordination. These elements of effective collaboration can be improved by designing networks that address conventional face-to-face collaborative issues, and creating communities with shared collaborative objectives and facilitated communication. Examples of new thinking necessary to facilitate such change are full-representation opposed to equal-participation, relevance in place of interests, and new definitions of “enrolled,” “participation,” and “contributor” which indicates a type of information instead of a degree of contribution. I would describe the ideal networked collaboration environment as the grown-up version of current, popular social sites, and a more dedicated use of available communication tool. Networked collaboration and social media seem poised, similar to the personal computer before the introduction of a digital spreadsheet, ready for the next technology that will catapult the industry forward and take advantage of a platform currently under performing and underutilized.

## Works Cited

- Adler, Paul S, and Terry A. Winograd. Usability: Turning Technologies into Tools. New York: Oxford University Press, 1992.
- Amichai-Hamburger, Yair. The social net: Human behavior in cyberspace. New York: Oxford University Press, 2005.
- Anderson, Chris. The Long Tail: Why the Future of Business Is Selling Less of More. New York: Hyperion Books, 2006.
- Bohm, David. On dialogue. New York: Routledge, 1996.
- Brown, John, and Paul Duguid. The Social Life of Information. Boston: Harvard Business School Press, 2000.
- Ellinor, Linda and Glenna Gerard. Dialogue: Rediscover the transforming power of conversation. New York: John Wiley & Sons, Inc., 1998.
- Heim, Michael. The metaphysics of virtual reality. New York: Oxford University Press, 1993.
- Isaacs, William. Dialogue and the art of thinking together. New York: Currency Doubleday, 1999.
- Kelly, Kevin. Out of control: The new biology of machines, social systems, and the economic world. New York: Addison-Wesley Publishing Company, 1995.
- Lencioni, Patrick. The Five Dysfunctions of a Team: A Leadership Fable. San Francisco: Jossey-Bass, 2002.
- Levine, Rick, Christopher Locke, Doc Searls, and David Weinberger. Cluetrain Manifesto. Cambridge: Perseus Publishing, 2000.
- Levy, Pierre. Collective Intelligence: Mankind's Emerging World in Cyberspace. Trans. Robert Bononno. New York: Plenum Press, 1997. 13-14.
- Moggridge, Bill. Designing Interactions. London, England: The MIT Press, 2007.

- Negroponte, Nicholas. Being Digital. New York: Vintage Books, 1995.
- Peat, David. Infinite Potential: The Life and Times of David Bohm. New York: Addison-Wesley Publishing Company, Inc., 1997.
- Pink, Daniel H. A Whole New Mind: Why Right-Brainers Will Rule The Future. New York: Penguin Group, Inc., 2006.
- Raymond, Eric S. The Cathedral and the Bazaar. 2000. 27 Feb. 2009.  
<<http://gnuwin.epfl.ch/articles/en/cathedralbazaar/cathedral-bazaar.pdf>>
- Rheingold, Howard. Smart Mobs: The Next Social Revolution. Cambridge: Basic Books, 2002.
- Senge, Peter. The Fifth Discipline: The art and Practice of The Learning Organization. New York: Currency Doubleday, 1990.
- Shirky, Clay. Here Comes Everybody: The Power of Organizing Without Organizations. New York: The Penguin Press, 2008.
- Sunstein, Cass R. Infotopia: How Many Minds Produce Knowledge. New York: Oxford University Press, Inc., 2006.
- Surowiecki, James. The Wisdom of Crowds. New York: Anchor Books, 2004.
- Tapscott, Don, and Anthony D. Williams. Wikinomics: How Mass Collaboration Changes Everything. New York: Penguin Group, 2006.
- Young, Jeffrey. Forbes Greatest Technology Stories: Inspiring Tales of the Entrepreneur and Inventors Who Revolutionized Modern Business. New York: John Wiley & Sons, Inc., 1998.
- Weinberger, David. Everything is Miscellaneous: The Power of the New Digital Disorder. New York: Times Books, 2007.
- Winograd, Terry. Bringing Design to Software. New York: ACM Press, 1996.