Research and Emerging Trends in Social Computing

Wendy A. Kellogg
Manager, Social Computing
IBM T.J. Watson Research Center


May 17, 2005
Overview

- A Social Computing Perspective

Social Translucence and Remote Collaboration

Emerging Trends in Collaboration
  - Large-scale interactions: IBM World Jam
  - Voice of the individual: blogs

Network Effects and Self-Regulation
  - IBM Community Tools
  - Slashdot
  - Wikipedia

Many to Many Communication
  - Backchannels and Blogging at the Social Computing Symposium
  - Moveon.org, MeetUp.com
  - Oppositional new media

The Future of Work
Business Value of Social Relationships

“In the knowledge economy, all workers are volunteers.” Peter Drucker

Town governments in Italy: single most important factor in economic success? Number of choral societies.

Millen & colleagues: Survey of 280 members of 4 communities of practice
73% reported increased skills; 61% reported productivity gain
92% “increased sharing of expertise, knowledge, and resources”
83% “increased collaboration and problem solving”
Time spent in various types of work shifted: more time communicating; less time looking for stuff

Invest in social capital – interpersonal connections
Benefits: engagement, collaboration, loyalty, persistence, dedication
Social Computing Forecast 2002

Social computing transforms the Net by creating a pervasive technical infrastructure that ... includes people, organizations, and their activities as fundamental system components ... enables identity, behavior, social resources, and expertise to be used as resources.

Social computing systems gather, store, process, re-present, and disseminate social information, which is distributed across social collectivities such as teams, communities, organizations, cohorts, populations, and markets. Examples include collaborative filtering and recommender systems (e.g., Firefly), online auction sites (e.g., eBay), open source virtual communities (e.g., Slashdot), and collaborative applications (e.g., instant messaging, Babble, collaboratories).

The central hallmark of social computing is identity of computer users: it is not just data about an identity that matters, but to whom data belongs, and how the owner's identity is related to other identities in the system. Social computing systems are likely to contain components that support and represent social features such as identity, reputation, trust, accountability, presence, social roles, expertise, knowledge, and ownership.
Perspective: Social Translucence

- A tale of two doors
  - A door
  - A problem
- Two types of solutions

Perspective: Social Translucence

- Why the glass window works...
  Perceptual cues engage us in a way that text doesn’t
  Awareness brings social rules into play
  Accountability: I know that you know that I know

- We call systems that do this "socially translucent" systems
  they're ubiquitous in the f2f world
  but rare in the digital world
Social Computing@Watson: Early Work

Value of creating common ground in online interactions
- Visualizing people and their activities
- Virtual communities
- Conversation-based online interactions

Enabling and leveraging social dynamics
- Social translucence
  - designing translucent, not transparent, reps of people and activity
  - perceptually salient cues that support awareness and accountability
- Priority on shared views (resources for common ground)
- Blended synchrony (enabling the “long now”)

Supporting semi-structured interactions
- Brainstorming, Conf Calls, Decision Making
- Process Awareness
- Self-organization (and informality)
- Activity Management
Overview

A Social Computing Perspective

➢ Social Translucence and Remote Collaboration

Emerging Trends in Collaboration
  Large-scale interactions: IBM “jams,” Slashdot
  Voice of the individual: blogs

Network Effects and Self-Regulation
  IBM Community Tools
  Slashdot revisited
  Wikipedia

Many to Many Communication
  Backchannels and Blogging at the Social Computing Symposium
  Moveon.org, MeetUp.com
  Oppositional new media

The Future of Work

Social Proxies

Conference Call proxy

Timeline proxy

Lecture proxy

Online Lines proxy

Figure 4. The lavender marble (at 11:00) has ‘stepped out.’
An Organizational Task Proxy (2004)

What a task proxy provides:

- Glanceable view of participants or subcomponents, status, and contextualized communication
- Representation of hierarchy
- Configurable business policies (e.g., policies about what each role player can see)

Hexagons represent subcomponents of task (here, people responsible for doing a subtask)
- Organizational groups represented by clusters; task state represented by color (e.g., green for ‘task completed’; white for ‘not yet started’)

Rendezvous: Conference Call Management and VoIP (2005)

User experience: “one-stop shopping” for call management; process awareness as a resource for conference calls
Infrastructure: VoIP cost savings realized by automatically choosing most cost effective way to implement a particular call; transparent to user.
Overview

A Social Computing Perspective

Social Translucence and Remote Collaboration

- Emerging Trends in Collaboration
  - Large-scale interactions: IBM World Jam
  - Voice of the individual: blogs

Network Effects and Self-Regulation
- IBM Community Tools
- Slashdot
- Wikipedia

Many to Many Communication
- Backchannels and Blogging at the Social Computing Symposium
- Moveon.org, MeetUp.com
- Oppositional new media

The Future of Work
Jamming is a concept to leverage the collective intelligence of a company’s people

_In today’s new economy - nonprofit as well as profit - the minds of gifted people are what truly distinguish one organization from another...but minds alone, however prolific with fresh ideas, are nothing without processes specifically designed to translate these fresh ideas into valued products and services._

- John Kao, “Jamming: The Art and Discipline of Business Creativity”

- Management has often been taught that scale cannot be “leveraged” when it comes to people – there is no economy of scale for knowledge

- However, for many problems in a company, there is probably someone, somewhere who has solved all or most of the problem

- Jamming addresses this issue
The primary goal of IBM’s WorldJam experiment was to foster company-wide brainstorming for breakthrough solutions.

This goal was supported by the following objectives:

- Leverage the power of IBM’s world-class Intranet to help employees improve the way they work.
- Provide a fast, engaging, large-scale approach to surfacing best practices through a qualitative research convention.
- Sponsor a high-profile demonstration of the Web’s potential for B2E communications, via a new subset: employee-to-employee (e2e) communications.
- Focus on ten crucial operational (project team), transformation (college seminar), and social areas (group therapy/process).
- Let thousands of IBMers act as subject-matter experts, with guidance from forum moderators. Capture ideas in a database that lives on as a resource.
- Allow participants to vote, in real time, on which ideas hold the most promise.
WorldJam was designed to leverage the power of IBM’s intranet to surface best practices on a global scale

- WorldJam stats at a glance
  - 72 hour online event from May 21-24, 2001
  - 52,595 virtual participants
  - 1/6 of total IBM’s 300K workforce
  - 6,000 comments generated in 10 discussion forums
  - 10 forums covered business issues and employee work/life balance
  - 10 forum teams with 10 moderators and 4 facilitators
WorldJam’s challenge was to wrap culture, knowledge-based processes, and technology together
Participants, moderators, and researchers were able to monitor real-time interactions via the WorldJam Activity Map.
Babble was designed to provide “backstage” support to WJ moderator and facilitator teams

- Teams were encouraged to utilize Babble as a “War Room”
- Blend of synchronous and historical capabilities enabled team troubleshooting

Yvette: Michael do you know if moderator lines are down? Trying to figure out if it’s just my forum or all forums.

Michael: My moderator functions are spotty. Anthony already placed a call to the tech support team. Hold tight!
Executive Summary of WorldJam Findings

Major Findings

- **Expertise Acceleration**
  WorldJam brought people together who might otherwise never have met
  Our estimate is at least 2,000 new contacts

- **Trust**
  WorldJam participants trusted each other

- **Repeatable**
  WorldJam participants would do it again.

Proof Points

- 10% of respondents engaged directly with at least one other person, usually someone new
- 61% of these respondents looked at their contacts' Blue Pages or Persona information
- 42% think future contact is likely
- 68% said WorldJam showed people can constructively criticize one another.
- 66% said others’ comments influenced them to think differently about one or more issues.
- 85% said they would engage in a similar event.
- 62% learned new things.
- 56% said WorldJam gave them specifics they can use in their work.
“Meet Joe Blog”

Time Online Edition (Sunday, June 13, 2004) describes the ascension of blogs as a media force – or is it just a bubble?

“Not that long ago, blogs were one of those annoying buzz words that you could safely get away with ignoring…

… but it turns out some people actually have interesting thoughts on a regular basis, and a few of the better blogs began drawing sizable audiences.

… Most of America couldn’t have cared less … until December 2002 [at] Strom Thurmond’s 100th birthday party [when] Trent Lott made what sounded like a nostalgic reference to Thurmond’s past segregationist leanings.

… the story got ignored for … days … while blogs kept it alive…

… three days after the party, the story was on Meet the Press. Four days afterward, Lott made an official apology. After two weeks, Lott was out as Senate majority leader, and blogs had drawn their first blood.”
Overview

A Social Computing Perspective

Social Translucence and Remote Collaboration

Something For Everyone: Emerging Trends in Collaboration
   Large-scale interactions: IBM World Jam
   Voice of the individual: blogs

Network Effects and Self-Regulation
   IBM Community Tools
   Slashdot
   Wikipedia

The Power of Many to Many Communication
   Backchannels and Blogging at the Social Computing Symposium
   Moveon.org, MeetUp.com
   Oppositional new media

The Future of Work
"Which do you like best: Pepsi or Coke?"

"Do you think it’s an appropriate use of Pollcast to ask about soft drink preferences?"

vs.

"This Poll is Inappropriate"

Thousands of comments
Per day

Tens of thousands per month

DB holds 50,000 posts

One story might get 1000’s of comments
Slashdot Moderation: Experiments in Mass Interaction

“In the beginning, Slashdot was small. The signal was high; the noise was low.” Slashdot editor, CmdrTaco

Karma:
participants are awarded ‘karma’ points for posting stuff that moderators like

Moderators:
chosen at random from a pool of eligible participants favors registered users, regular readers, long-term readers, willing to serve, positive contributors

How It Works:
Moderators are chosen, given a finite number of karma points to distribute, and get 3 days to distribute them

Slashdot Goals for Moderation:
Promote quality; discourage junk
Make it as readable as possible for the most people possible
Do not require a huge amount of time from any single moderator
Do not allow a single moderator a “reign of terror”
Wikipedia

Collaborative encyclopedia. Anyone can edit. Leads to some interesting dynamics, especially for controversial topics.
Wikipedia Entry on Abortion Over Time (From Wattenberg & Viegas, 2004)

Vertical blanks show vandalism… … but repair is almost instantaneous
Overview

A Social Computing Perspective

Social Translucence and Remote Collaboration

Emerging Trends in Collaboration
  Large-scale interactions: IBM World Jam
  Voice of the individual: blogs

Network Effects and Self-Regulation
  IBM Community Tools
  Slashdot
  Wikipedia

➢ Many to Many Communication
  Backchannels and Blogging at the Social Computing Symposium
  Moveon.org, MeetUp.com
  Oppositional new media

The Future of Work
Backchannels and Blogging at the Social Computing Symposium

[17:03] <SebPaquet> What's the social atmosphere like at the symposium?
[17:04] <[1]davidw> Seb, the social atmosphere is very congenial.
[17:04] <cshirky> seb, its become a poisonous spitting match between the pro- and anti-FOAF camps...
[17:04] <SebPaquet> hehe
[17:04] <[1]davidw> heh
[17:04] <Joilo> it's like a warm fuzzy echo chamber
[17:04] <Joilo> hard on the outside, warm and fuzzy on the inside
[17:04] <[1]davidw> It's academics and Netties in the same room. Each envious of the other, but always for the wrong reasons.
[17:04] <SebPaquet> Lots of lovin
[17:04] <Joilo> hehe
[17:04] <yonderboy> it's like a school bus full of friends
[17:04] <[1]davidw> It's like a schoolbus full of danahs
[17:05] <Joilo> with Clay driving

5 “real-time” blogs; 2 backchannels; 15 related personal blogs; 4 “official” sites or links
Moveon.org

“Democracy in Action”

Launched June, 2002; 2.3 million members

Has raised tens of millions of dollars for political action

Networking in action: “write your own political ad.”

-- 1500 entries received; voting on electronically by members
-- Top 15 reviewed at meeting in New York
-- Winner made into a national TV ad
Meetup.com

Local meetings, held all over the U.S., on the same day, on particular topics

Launched June, 2002; 385,000 users; growing fast

Week of March, 22, 2004: 1400 meetups in U.S.

“There’s something about face to face that is important…”

“The big bet … [can people] figure it out? Do you need a leader, nice PA systems, powerpoint?”

-- Scott Heiferman, CEO, Meetup.com
Oppositional New Media (Lievrouw, 2003)

Culture Jamming
“Media hacking, information warfare, terror-art, and guerrilla semiotics, all in one” (Dery, 1993)

Surveillance Camera Players

Hacktivism
Uses the technical expertise of computer professionals who object to political or commercial restraints on access to information and information technology

DeCSS (Decrypt Content Scrambling System)

Affiliation Networks
Connect like-minded but geographically dispersed people
Peer to peer computing: a technological model based on interpersonal networks and shared interests. Fluid, social, and cooperative environment.

Blogs
The Eric Corley Story

In 2000, he published the DeCSS program in 2600: The Hacker Quarterly
   - Already published by the Scandinavian programmer who developed it
   - Program is not illegal in Europe
   - Allows users to decrypt & run DVD’s on Linux systems rather than exclusively on MS systems

Corley is sued by Universal Studios for violating the Digital Millennium Copyright Act

Argues First Amendment speech and press rights as his defense
   - Judge disagreed and in 2001 prohibited him from publishing or linking to sites that publish DeCSS
   - Corley subsequently lost an appeal and then declined to carry the appeal further to the U.S. Supreme Court

During the legal battle, supporters in the programming community launched a protest
   - Online art gallery at CMU incorporating the DeCSS code
   (and oh, btw, a lawyer for the prosecution filed a publicly accessible brief including the code… whoops!)
Characteristics of Oppositional New Media (Lievrouw, 2003)

Small Scale
“micromedia” (Peretti, 2001)
“what happens when the cheap, ‘do it yourself’ media … are exploited by groups and individuals who feel aggrieved by or excluded from the wider culture” (Garcia & Lovink, 1997)

Interventionist
They constitute intervention and action, or they invite and motivate it in others

Visual, Cultural, or Subcultural Literacy
Oppositional new media demonstrate and expect this from their audiences

Ironic
Playful, humorous, campy, or parodic. “Culture jamming is immature” (Peretti, 2001)
[jammers] “do not take themselves that seriously” (Lovink & Richardson, 2001)

Liquid
Ephemeral in relation to current cultural context
“Capable of taking risks, even if … they might self-destruct in the process (Lovink & Richardson, 2001)
Overview

A Social Computing Perspective

Social Translucence and Remote Collaboration

Emerging Trends in Collaboration
  Large-scale interactions: IBM World Jam
  Voice of the individual: blogs

Network Effects and Self-Regulation
  IBM Community Tools
  Slashdot
  Wikipedia

The Power of Many to Many Communication
  Backchannels and Blogging at the Social Computing Symposium
  Moveon.org, MeetUp.com
  Oppositional new media

➢ The Future of Work
The Future of Work (Malone, 2004)

The major ways human societies have been organized throughout history reveal a remarkably simple pattern that foreshadows how businesses are now changing:

- bands (independent)
- kingdoms (centralized)
- democracies (decentralized)

Four types of decentralized organizational structures:

- loose hierarchies (consulting firms; research universities)
- democracies (political democracies; corporate shareholder meetings)
- external markets (free markets; the Internet)
- internal markets (inside organizations)

“enabled by technology; centered on human values”

From “command-and-control” to “coordinate and cultivate” management
From corporate hierarchies to networks
The Future of Work (Malone, 2004)

Trends:

Average size of firms in many U.S. industries is declining
   -- Increased outsourcing (largest U.S. employer is Manpower, not GM, IBM, or Wal-Mart)

Increasing amount of work being done by ‘virtual corporations’ – informal, ever-shifting alliances of people and firms

Decisions being pushed lower down in corporate ranks; incentives being offered to more employees

Drivers: increasing globalization, education, affluence, etc.
   and especially cheaper communication:

1990’s: explosion of one-to-many and many-to-many media for business communication.
1990’s Explosion of One-to-Many & Many-to-Many Business Communication

“Today, anyone with access to the Internet can find – almost immediately and often at no cost – a greater wealth of information on many subjects than was available to even the most elite decision makers at the tops of huge organizations like IBM, General Motors, and the U.S. government, only a few decades ago.”

Malone’s research showed the benefits of centralization are often the benefits of bigness, not centralization per se.

So, if communication is cheap enough, “you can decentralize in a way that gives you both the benefits of bigness (like scale economies) and the benefits of smallness, like motivation and flexibility.”

Two important trends related to this:
-- IT relentlessly pushing down communication costs
-- increasing importance of knowledge work, making motivation, creativity, and flexibility more important than ever
Summary

Lots of interesting social computing phenomena on the net today
-- at different scales
-- networks and network dynamics are increasingly prevalent
-- most dominant social forms seem to be about affiliation, protest, or common interests

How and when they will apply in business settings is speculative at this point
-- how decentralized will businesses get, in what industries, and at what rate?
-- will organizations see the potential benefits of social computing and networking (smarter, more innovative, productive employees) outweighing the potential risks (loss of control, abuse)?
-- how much weight will be accorded to ‘intangibles’ like building social capital, or forming and maintaining communities?
Maestro: Greenspan as an HCI Researcher!

Greenspan is a maestro, a conductor, exquisitely attuned to every instrument in the political and economic orchestra.

“...a gripping, intimate narrative...”

“...a very intelligent number-cruncher who decides to raise or lower interest rates...”

“...while the other guys got stoned all night, Greenspan ‘read economics and business books and eventually became the band's bookkeeper’...”

“...for all his awesome knowledge of monetary minutiae, the Fed chief literally relies on ‘a pain in the pit of my stomach’ to make decisions. At times, he found his body sensed danger before his head...”
So How Will You Invest in Social Computing Futures?

“First we thought the PC was a calculator. Then we found out how to turn numbers into letters with ASCII – and we thought it was a typewriter. Then we discovered graphics, and we thought it was a television. With the World Wide Web, we’ve realized it’s a brochure.”

-- Douglas Adams

(And now with blogs, wikis, slashdot, eBay, the surveillance camera players, de-encryption t-shirts, friends, dates, and more, we know it to be life, the universe, and everything...)