National Initiative on
Technology-Mediated
Social/Civic Participation

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Founding Director (1983-2000), Human-Computer Interaction Lab
Professor, Department of Computer Science
Member, Institute for Advanced Computer Studies
Interdisciplinary research community
- Computer Science & Info Studies
- Psych, Socio, Poli Sci & MITH

(www.cs.umd.edu/hcil)
Design Issues

• Input devices & strategies
  • Keyboards, pointing devices, voice
  • Direct manipulation
  • Menus, forms, commands

• Output devices & formats
  • Screens, windows, color, sound
  • Text, tables, graphics
  • Instructions, messages, help

• Collaboration & Social Media

• Help, tutorials, training

• Search

• Visualization
Social media

From Wikipedia, the free encyclopedia

Communication

- **Blogs**: Blogger, LiveJournal, TypePad, WordPress, V
- **Internet forums**: vBulletin, phpBB
- **Micro-blogging / Presence applications**: Twitter, Pownce, Jaiku
- **Social networking**: Bebo, Facebook, LinkedIn, MySpace, Orkut, Skyrock, Hi5
- **Social network aggregation**: FriendFeed, Youmeo
- **Events**: Upcoming, Eventful, Meetup.com
- **Discussion Groups**: Google Groups, Yahoo Groups, Windows Live Groups

Collaboration

- **Wikis**: Wikipedia, PBWiki, wetpaint
- **Social bookmarking** (or Social tagging) (Goldar & Huberman, 2006): Delicious, StumbleUpon, StumpleUpon, Google Reader, CiteULike
- **social news**: Digg, Mysx, Reddit
- **Opinion sites**: opineions.com, Yelp

Multimedia

- **Photo sharing**: Flickr, Zoopmr, Photobucket, SmugMug
- **Video sharing**: YouTube, Vimeo, Rewer
- **Art sharing**: deviantART
- **Livecasting**: Ustream.tv, Justin.tv, Skype
- **Audio and Music Sharing**: imeem, The Hype Machine, Last.fm, cCmixer

Reviews and Opinions

- **Product Reviews**: epinions.com, MouthShut.com
- **Q&A**: Yahoo Answers, WikiAnswers

Entertainment

- **Virtual worlds**: Second Life, The Sims Online
- **Online gaming**: World of Warcraft, EverQuest, Age of Conan, Spore (2008 video game)
- **Browser games**: OGame, Omertà, Travian, Hatnick
- **Game sharing**: Miniclip

Languages

- Deutsch
- Español
- Français
- 한국어
- Italiano
- Македонски
Social Computing: Transformative Movement

- Restructuring
  - Economies, political structures, social systems
  - Scientific disciplines & methods
  - Academic curricula & teaching strategies
  - Government agendas
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- Restructuring
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- Crime, terrorism, racial hatred, dictatorships
Can Computing Evolve?

- Human-Computer Interaction
- Web Science
- Social Computing/Social Informatics
- Information: I-Schools
- Business: B-Schools
- Design: D-Schools

- Social Physics (Auguste Comte, 1830)
- Social Sciences
- Complexity, Chaos & Network Theory
Vision: Social Computing

1) Focus on National Priorities & Impact
   • Health, energy, education, business innovation
   • Disaster response, community safety
   • Environmental awareness, biodiversity

2) Develop Theories of Social Computing
   • How do networks evolve? Can we predict areas of growth, stability, decline, infections, disruptions?
   • Can we guide intervention to stop terrorists, slow epidemics, increase sales, promote health?

3) Provide Technology Infrastructure
   • Scalable, reliable, universal, manageable
   • Protect privacy, stop attacks, resolve conflicts
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Energy, Education, Business Innovation

Energystar.gov

innocentive.com
Disaster Response: Wildfires

Yahoo! News California Wildfires

Twitter

#sandiegofire Harris fire now 50 percent contained 08:21 AM October 27, 2007 from web

#sandiegofire Witch Creek fire now 60 percent contained 08:21 AM October 27, 2007 from web

#sandiegofire Rice Canyon fire now 80 percent contained 08:21 AM October 27, 2007 from web

@pinguino that’s really cool. Thanks! 08:20 AM October 27, 2007 from web
Community Safety: Abducted Children

AMBER Alert
America's Missing: Broadcast Emergency Response

About AMBER Alert
- Guidelines
- Coordinator
- Legislation
- National Strategy

Statistics

Resources
- State AMBER Alert Contacts
- Wireless AMBER Alerts
- Toolkit for Raising Awareness
- Training

Newsroom
- Press Releases
- Publications
- Videos
- Messages
- Events
- Speeches

The AMBER Alert Program is a voluntary partnership between law-enforcement agencies, broadcasters, transportation agencies, and the wireless industry, to activate an urgent bulletin in the most serious child-abduction cases. The goal of an AMBER Alert is to instantly galvanize the entire community to assist in the search for and the safe recovery of the child.

The information and statements contained on this official Department of Justice AMBER Alert website shall not be used for the purposes of advertising, nor to imply the endorsement or recommendation of the United States Government. Use of the AMBER Alert logo is subject to the Department of Justice legal policies and disclaimers regarding the use of DOJ seals and logos.

www.ncmec.org
www.missingkids.com
www.amberalert.gov
The eight Millennium Development Goals (MDGs) – which range from halving extreme poverty to halting the spread of HIV/AIDS and providing universal primary education, all by the target date of 2015 – form a blueprint agreed to by all the world’s countries and all the world’s leading development institutions. They have galvanized unprecedented efforts to meet the needs of the world’s poorest.

"We will have time to reach the Millennium Development Goals – worldwide and in most, or even all, individual countries – but only if we break with business as usual. We cannot win overnight. Success will require sustained action across the entire decade between now and the deadline. It takes time to train the teachers, nurses and engineers; to build the roads, schools and hospitals; to grow the small and large businesses able to create the jobs and income needed. So we must start now. And we must more than double global development assistance.
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Network Theories: Evolution models

- Random, preferential attachment, triangles…
- Monotonic, bursty, 3-phase…
- Power law for degree (hubs & indexes)
- Small-world property
- Forest fire, spreading activation …
- Matures, collapses, decays, fragments, …

Kumar, Novak & Tomkins, *KDD2006*
Leskovec, Faloutsos & Kleinberg, *TKDD2007*
Motivations for participation

• Fear, imminent threat
  (Rogers, 1975)

• Revenge, response to tragedy, guilt
  (Hanson, 2008)

• Egoism, altruism, collectivism, principilism
  (Batson, Ahmad & Tseng, 2002)
Stages of participation

Wikipedia & Reporting sites

• Reader

• First-time Contributor
  (Legitimate Peripheral Participation)

• Returning Contributor

• Frequent Contributor

Preece, Nonnecke & Andrews, *CHB2004*
Forte & Bruckman, *SIGGROUP2005*; Hanson, 2008
Porter: *Designing for the Social Web, 2008*
Vassileva, 2002, 2005; Ling et al., *JCMC 2005*; Rashid et al., *CHI2006*
From Reader to Leader:
Motivating Technology-Mediated Social Participation

Preece & Shneiderman, AIS Trans. Human-Computer Interaction1 (1), July 2009
aisel.aisnet.org/thci/vol1/iss1/5/
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Technology Infrastructure

- Platform & browser independent
- Desktop, Web, Mobile
- Petabytes, Tera-contribs, Giga-collabs
- 24/7, 100% uptime, secure, private
- Universal access & usability
- Trust, empathy, responsibility
- Enables leaders to manage activity
- Supports continuous improvement
SocialAction: Senate Vote Patterns

Links are drawn between senators if they voted together on more than 150 RCs.

The Democrats (blue) and Republicans (red) form natural communities.

Both Brownback and McCain are isolates because they never voted more than 150 times with any other senator.

Perer & Shneiderman, CHI 2008

www.cs.umd.edu/hcil/socialaction
NodeXL: Network Overview for Discovery & Exploration in Excel

www.codeplex.com/nodexl

www.casci.umd.edu/NodeXL_Teaching
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Early Steps

National Initiative for Social Participation

Goal: to promote dramatically increased research support and educational opportunities for technology-assisted social participation especially as related to national priorities.

Draft: May 30, 2009

NSF-funded Workshops
- Dec 10-11, PARC
- Feb 11-12, NSF-HQ

www.tmtp.umd.edu

http://iparticipate.wikispaces.com
Road ahead

• Much work to be done
• Difficult to attain all our goals
• But we can make important contributions
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• Difficult to attain all our goals
• But we can make important contributions

• Shift public policy
  • National Institutes for Social Computing
  • National Initiative for Social Participation

• Change our research community
• Restructure our academic curricula