Mediating Human-to-Human Interactions through Technology

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Faculty of Information
University of Toronto

University of Waterloo Database Group
September 29, 2010
About Me

IBM Centers for Advanced Studies

- Business Domain
- Technology
- People & Culture
- Service Science

UNIVERSITY OF TORONTO
FACULTY OF INFORMATION

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My Students

Abayomi King, MSc candidate
Dept of Computer Science

Zack Hayat, PhD candidate
Faculty of Information

John Peco, PhD candidate
Faculty of Information

Fan Dong, MSc candidate
Dept of Computer Science

Dejana Bajic, MSc candidate
Dept of Computer Science
Motivation

- Many interactions in service systems are taking place over distance:
  - Meetings
  - Project team work
  - Research collaborations
  - Software development
  - Customer Engagement
Social Media

- Social media techniques and environments:
  - Online profiles, articulated social networks, formation of communities, user-generated content
  - Social tagging, blogging, microblogging, wikis
Question

How can we design, develop, understand, and make use of social media technology and environments to facilitate or mediate human-to-human interactions?
Approaches

1. Understanding social media environments and techniques and their impact on traditional techniques and environments
2. Understanding traditional environments and techniques and how social media techniques might work within them
3. Using social media techniques in traditional environments
4. Using traditional techniques in social media environments
## Approaches

<table>
<thead>
<tr>
<th>Understanding</th>
<th>Use / Implement</th>
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<tr>
<td>Social in Traditional Settings</td>
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- **Projects**
  - Millennials
  - Research Teams
  - User Feedback
  - Team Awareness
  - Delphi

**Recap**

Sept. 29, 2010
Projects

**Understanding**

- Social in Traditional Settings
  - Millennials

**Use / Implement**

- Use Feedback
  - Team Awareness

- Traditional in Social Settings
  - Research Teams

- Delphi Recap
  - Discussion

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### Projects

#### Social in Traditional Settings

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#### Social Media

- Question
- Approaches
- Projects
- Millenials
- Research Teams
- User Feedback
- Team Awareness
- Delphi
- Recap
- Discussion
Millenials

- What are the norms and behaviours relating to the use of Internet information and social media environments among 20-25 year olds (millennials)?
- How do millennials utilize social media when making decisions?
- What are the differences between personal (individual) decision-making and group decision-making?
- What are the anticipated decision-support requirements of the millennials as they enter the workforce over the next several years?
Millenials

Internet Use

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keep in Touch</td>
<td>94.5%</td>
</tr>
<tr>
<td>School/Work</td>
<td>94%</td>
</tr>
<tr>
<td>Entertainment</td>
<td>89.3%</td>
</tr>
<tr>
<td>Other</td>
<td>49%</td>
</tr>
<tr>
<td>Buy/Sell</td>
<td>46%</td>
</tr>
</tbody>
</table>

Upon reflection of your decision-making activity and your resulting choice, please indicate your agreement with each of the following statements:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>People (or an individual person) helped me make a good decision</td>
<td>83 %</td>
</tr>
<tr>
<td>The information I found on the Internet helped me make a good decision</td>
<td>79%</td>
</tr>
</tbody>
</table>
Millenials

- The level of satisfaction with the duration of the overall decision-making **time-frame**
  - is somewhat dependent upon the respondents’ use of **social media**

- The **quality** of information obtained during the decision-making process
  - is somewhat dependent upon the use of **social media**

- The **usefulness** of the information obtained during the decision-making process
  - is somewhat dependent upon input obtained from members of personal networks including **family** and **friends**
Millenials

• When confronted with a decision:
  • Millennials may speed up their decision-making time frame
    • by engaging with their network of family and friends using social media
  • Millennials are more likely to trust the information they find online
    • if they can filter it through their friends and family using social media
Projects

Understanding

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Traditional in Social Settings

Millenials

User Feedback

Research Teams

Team Awareness

User Feedback

Delphi

Team Awareness

Millenials
Research Teams

- Virtual teams are enjoying increased importance in the conduct of scientific research
- **Goal:** To understand virtual research environments (VREs) in order to improve effectiveness of research collaborations
  - Technological platforms
  - Research processes and practices
  - Participants (organizations and individuals)
  - Measurements and metrics
Research Teams

**people-to-people**

Communication, Groupware Services

- Distributed, media-rich information technology

Digital Libraries

- Access to information

Interaction with the Physical World

- Access to facilities

- User Feedback
- Team Awareness
- Delphi

- Millenials

**Research Teams**

- Question Approaches
- Projects

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**About Me**
Research Teams

- CASCON 20th Year: 1991 to 2009
- Look at the community of CASCON authors
Research Teams

- Social Network Analysis:
  - How is the CASCON community organized?
  - How does social capital evolve within the community?
- Social capital in the CASCON community is maintained by closure among members
- Follow up study:
  - Interviews with central actors in the network

Research Teams

CASCON proceedings: 1991 to 2009

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Collective User Feedback

- Investigate how software companies are using social media techniques to gather feedback from many users collectively.
- Studied 45 different software providers currently using Uservoice as their user feedback gathering mechanism.
  - Allows customers to propose new ideas, and comment and vote on existing ones.
  - Suggest a set of propositions and questions about how this type of feedback might impact software design, development, deployment, and usability.
Collective User Feedback

Feedback and Ideas for SAP StreamWork

SAP StreamWork Forum

Welcome to the feedback forum for SAP StreamWork. Do you have an idea to help improve SAP StreamWork? Do you recognize a good idea when you see one? We want to hear from you!

I suggest ...
- enter your idea (new feature, fix bug, etc) -

Search

321 votes

View & Edit Documents in Real-Time (like Google Docs)
The document editing aspect is not ideal today. Uploading works fine, but if I open and save my changes its nearly impossible to find where that document is stored on my local machine. Wouldn’t it be much more effective if the documents could be viewed and edited in an editor window within 1... more

by rbbn_rothschild | 17 comments

Status: under review

295 votes

MindMap Gadgets for discussions
I’d like to use 12sprints not only as a meeting records or but also as a room for inventing and producing new ideas. Sharing an image and expanding an idea via text is not so easy, but I believe if there is some kind of Mindmap gadgets, we could solve this.

by Hiroshi Iwanaga | 17 comments
Collective User Feedback

**Proposition 1** – *The size of the user-feedback oriented communities does not necessarily depend on the number of customers that visit the site. Other factors are critical for community development.*
Proposition 2 – Enabling collaborations allows users to find suggestions similar to their own and hence reduces the total number of suggestions per user.
Proposition 3 – Some suggestions are implemented sooner, regardless of the popularity of (or demand for) the idea.

Open: The item has not received any attention from the sys admin
PSC: Planned, Started, Completed
Under Review: Suggestion is being evaluated by the administrators

*To be presented as a poster at CSER Fall Meeting Oct. 31, 2010
Projects

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Delphi

Sept. 29, 2010
Awareness in Software Development

- **Study**: one of the most frequently sought pieces of information by workers, was awareness of what other co-workers are doing

Awareness in Software Development

Plug-in for Eclipse / RTC
Automatically gleans activity information
Uses that to update status in Google Talk in real-time
Awareness in Software Development

Automatic Status Update

Select the Perspectives that once active, will show your status as 'Busy'.

- 0. APT Testing
- 1. Plain Perspective
- 2. Jazz Administration
- 3. Work Items
- 4. Debug
- 5. Java
- 6. Java Type Hierarchy
- 7. Java Browsing
- 8. Plug-in Development
- 9. CVS Repository Exploring
- 10. Team Synchronizing
- 11. Resource

- Check if you wish the system to save your GitK login information for this workspace.
- Check if you wish the system to automatically set your status for this workspace.

Automatic Status Update settings are local to each workspace.

*To be presented as a poster at Grace Hopper Celebration 2010; CSER Fall Meeting Oct. 31, 2010; and demo at CASCON 2010.
Awareness in Software Development

- Do automatic status updates gleaned from the system
  - Enhance users’ real-time awareness of co-workers?
  - Help others know when to (or not to) interrupt another user?
  - Help users decide what means to use to interrupt someone else?
  - Decrease the number of interruptions they receive?
- What privacy issues are raised and how these be solved or mitigated?
- Do different kinds of users tend to use this means of awareness most effectively and why?
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Collaborative Decision Making – Delphi Method

• Investigate effectiveness of Delphi method in collaborative decision making social platform:
  • Systematically solicit ideas from participants anonymously using questionnaires
  • Summarize results and feedback
  • Repeat as needed
Collaborative Decision Making – Delphi Method

A, B, ..., E are domain experts
- e.g., brainstorming

Round 1

A coordinator in a traditional way or computer tools in a modern way

Round 2

Experts are given the feedback from round 1, asked to assess the problem once more
- e.g., rank the inputs generated in round 1

Obtain the result, or proceed to next round

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Collaborative Decision Making – Delphi Method

- Delphi complements existing decision methods in StreamWork plus:
  - Provides anonymity and may increase decision making performance
  - Enables brainstorming and consensus reaching
- Implement Delphi in StreamWork
- Evaluate implementation of Delphi in social media platform (StreamWork)
Collaborative Decision Making – Delphi Method

Anonymous Brainstorming
Updated by Coordinator less than a minute ago
Coordinator about 1 month ago

Hastings Park Master Plan - The city of Vancouver is undertaking a Master Plan and consultation process to guide the redevelopment of Hastings Park. We are asking feedback from internal staff across the departments on initial ideas for the plan.
Given limited financial resources, suggest the projects you think the city should proceed with.

- Pedestrian and bicycle connections
- Park improvements including greenways and stream daylighting.
- The trail network
- Festival Plaza near the Hastings community center

*To be presented as a demo at CASCON 2010
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Acknowledgements

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Discussion....

THANK YOU!

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