Collaboration Tools & Lessons Learned

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Talk Overview

• Background - Research Project
• Tools Developed
• Lessons Learned
Collaboratory Project

• Joint research project of Lucent Bell Labs and University of Michigan, 1998-2001
• Charter: investigate issues in geographically distributed product development
• Main project studied: Lucent GSM development
Geographic Distribution

- Naperville
- Swindon
- Malmesbury
- Chippenham
- Dublin
- Paris
- Brussels
- Bangalore
- Hilversum
- Huizen
- Nuremberg
Project Overview

• Interviews, surveys of developers, managers
• Analysis of software change activity
• Introduction of some commercial tools
• Development and deployment of collaboration tools
Impact of distributed sites on development speed

*Last Modification - First Modification    **Last Modification - Open MR

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*Last Modification - First Modification    **Last Modification - Open MR
Collaboration Obstacles

- Lack of unplanned contact
- Knowing who to contact about what
- Difficulty of initiating contact
- Ability to communicate effectively
- Lack of trust, or willingness to communicate openly
Effects on Development

- Issue resolution paralysis and delay
- More people required to do the same work
- Very difficult to stay “in the loop”
- Conflict or misalignment of team goals
- Nonexistent or impaired social networks
- Ineffective collaborative sessions
- Less help with heavy workloads
Collaboratory Solutions

• Education - best practices
• Organizational
  – Align architecture and geographic distribution
  – Identify site liaisons
• Tools
  – Recommend commercial tools
  – Develop internal tools
Tools

- Rear View Mirror
- CalendarBot
- ExV
- TeamPortal
Rear View Mirror

- Presence Awareness
  - Who’s around
  - Group oriented
Rear View Mirror

- Group Chat
  - Always open
  - Persistent
  - Like a real time newsgroup
CalendarBot

- Shared Calendar
- Modeled after In/Out board
- Web based
  - No application software required
- Self explanatory interface
### Calendar View

**Message of the Day:** NOBODY CARES IF YOU CAN'T DANCE WELL, JUST GET UP AND DANCE.

*(Updated Wednesday, April 12)*

**Announcements:** CalendarBot internals have been changed. If you see any peculiar behavior, send mail to David Atkins.

*(Updated Friday, March 24)*

**Plans as of Thursday, April 13.** Click on a date to view plans for that date. Click on a name to view plans for that person.

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**Current Month:**

**View another month:**

**Document: Done**

**Oracle 9/16/2002 datkins 14**
### List View

**Dorene's CalendarBot**

[Click on a name to modify plans | Calendar view | Today's plans | Vacation plans | About | Group or User Administration]

Current group: all

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**MESSAGE of the Day:** NOBODY CARES IF YOU CAN'T DANCE WELL. JUST GET UP AND DANCE.

(Updated Wednesday, April 12)

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(Updated Friday, March 24)

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<tr>
<th>Name</th>
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<td>Mark Arkin</td>
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Updated Monday, April 10

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Updated Thursday, April 13

Unless otherwise indicated, working from Eugene.

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<th>Name</th>
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<td>Tom Ball</td>
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<tr>
<td>Thomas Baran</td>
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Plan View with edit links
CalendarBot Details

- Implemented in Mawl/C++
- Platform independent
- Proprietary data format
- Group views
- No logging in (but no security)
Experience Browser

- Find code experts
- Uses change history data
- Web based
Team Portal

- Convergence of communication
- Integrate presence, email, chat, schedules, etc.
Open Channels

- Sustained collaboration
- More effective ‘war room’ alternative
Lessons Learned

• Critical Mass
• Technology resistance
• Socializing is not work
• Privacy concerns
Critical Mass

• It takes (at least) two to collaborate
• Perceived and real value accelerates with number of users
• Need plan for collective adoption to insure success
Technology Resistance

- Intuitive interfaces essential to perceived value and adoption
- Resistance to installation, logistics of coordinated installation
- Need to keep training minimal
- Value must be enough to overcome adoption cost
Socializing

• Collaboration facilitated by social relationships
• Trust necessary for effective communication and collaboration
• Social chat establishes collaboration basis, but doesn’t seem like “real work”
Privacy

• Privacy very important to many users
• Cultural differences in privacy needs
• Privacy fundamentally at odds with collaboration
RVM Trials (& Tribulations)

- Difficult to get RVM usage started without enough users online
- Important to first convince users of value of presence monitoring and chat, not just training on tool usage
- A few enthusiastic users can jump start tool adoption
RVM (continued)

- Organizational obstacles to installation
  - Need management mandate
  - Individual training needed in small groups
- Privacy features defeat effective use
  - No one could see anyone else’s presence
  - Must ask colleagues for access permission
CalendarBot Adoption

• Critical mass less of an issue
  – All names can be pre-loaded
  – As more plans appear, value increases

• Web interface means no installation
  – Including URL on organization pages quickly promotes use
CalendarBot Simplicity

- Little or no training required
  - Interface self explanatory
  - Model obvious to grasp
  - Usefulness apparent
- No logging in required
- Easy to deploy improvements
  - Work of evolving data hidden from users
CalendarBot Too Simple?

- Coarser grain than appointment apps
  - Double entry of data
- No security
  - Anyone can change any data
- No data compatibility with other tools
Conclusions

• Presence awareness/messaging apps appealing to users, but hard to get started
• Simplicity in tools preferable for establishing use
• Value proposition must be compelling