CSCW and Software Engineering

Chapter 8: VIRTUAL TEAMS AND COMMUNICATION

Lecturer: Dr.-Ing. Stefan Werner
University Duisburg-Essen
Faculty of Engineering
Institute of Computer Engineering
Chapter 8: Virtual Teams and Communication

1. Introduction to CSCW and Software Engineering

2. Groups and Group Processes

3. Basic Concepts of CSCW and Groupware

4. Graphical User Interfaces and Awareness

5. Groupware architectures

6. Consistency and Concurrency Control

7. Virtual Teams

8. Virtual Teams and Communication
   8.1 Implicit vs. Explicit Communication
   8.2 Non-Verbal Communication
   8.3 Intercultural Communication
   8.4 Intercultural Communication in Virtual Teams
   8.5 Technology Platforms
   8.6 Crisis and Conflict Management

9. Cooperative Software Engineering
8. Virtual Teams and Communication
8.1 Implicit vs. Explicit Communication

- **Implicit Communication**  
  (tech. perspective: pull)

- **Explicit Communication**  
  (tech. perspective: push)
8. Virtual Teams and Communication

8.1 Implicit vs. Explicit Communication

• Asynchronous Communication
  – Shared documents
  – E-Mail

• Synchronous Communication
  – Telephone
  – Chat
  – Video-conferences
Non-verbal Communication

- uses means of expression such as gesture, facial expression and posture.

- "it seems as if humans react to gestures with an enormous vigilance in correspondance to a carefully generated and secret code which no-one knows, but everybody understands." [Sapir]

- within milliseconds it can be decided whether the dialog partner is considered as likable, authoritarian, intelligent, emotional, ambidextrous or boring.

- these impression of characteristic are triggered through visual stimuli – and are long-lasting and by no means only transient – correction through cognitive influences is extremely difficult.
### 8. Virtual Teams and Communication

#### 8.2 Non-Verbal Communication

<table>
<thead>
<tr>
<th>Visual Channel</th>
<th>Aural Channel</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Dimensions</strong></td>
<td><strong>Subsystem</strong></td>
</tr>
<tr>
<td>3</td>
<td>Head</td>
</tr>
<tr>
<td>49</td>
<td>Face</td>
</tr>
<tr>
<td>4</td>
<td>Shoulders</td>
</tr>
<tr>
<td>3</td>
<td>Torso</td>
</tr>
<tr>
<td>6</td>
<td>Upper Arm</td>
</tr>
<tr>
<td>18</td>
<td>Hands</td>
</tr>
<tr>
<td>2</td>
<td>Pelvis</td>
</tr>
<tr>
<td>5</td>
<td>Legs</td>
</tr>
<tr>
<td>14</td>
<td>Feet</td>
</tr>
</tbody>
</table>

**Dimensions of movement and speech behaviour**

---

*University of Duisburg-Essen*
*Faculty of Engineering*
*Institute of Computer Engineering*
*Prof. Dr.-Ing. Axel Hunger*

*CSCW and Software Engineering*
*WS 20012/13*
*Lecturer: Dr.-Ing. Stefan Werner*
We talk about **intercultural interaction and communication** if
- the person encountered belongs to another culture **and**
- both persons are aware that the other one is „different“, **thus**
- experiencing each other reciprocally as „strange“.

**Questions:** what are the cultural aspects that we have to put into account?
The Hidden Dimensions of the Cultural Iceberg

by DUARTE/TENNANT SNYDER (2001),
8. Virtual Teams and Communication
8.3 Intercultural Communication

Dimensions of Culture by Hofstede:

- Power Distance Index (PDI)
- Individualism (IDV)
- Masculinity vs. Femininity (MAS)
- Individualism (IDV)
### 8. Virtual Teams and Communication

#### 8.3 Intercultural Communication

<table>
<thead>
<tr>
<th>Cultural Dimension</th>
<th>Technology Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PDI</strong></td>
<td>Members from high-power cultures may participate more freely with technologies that are asynchronous and allow anonymous input.</td>
</tr>
<tr>
<td><strong>UAI</strong></td>
<td>People from cultures with high uncertainty avoidance maybe slower adopters of technology.</td>
</tr>
<tr>
<td><strong>IDV</strong></td>
<td>Members from highly collectivistic cultures may prefer face-to-face interactions.</td>
</tr>
<tr>
<td><strong>MAS</strong></td>
<td>People from cultures with more &quot;feminine,&quot; orientations are more prone to use technology in a nurturing way, especially during startups.</td>
</tr>
</tbody>
</table>
8. Virtual Teams and Communication
8.3 Intercultural Communication

Indonesia?
Germany?

PDI | IDV | UAI | MAS
---|---|---|---
70 | 50 | 40 | 60

University of Duisburg-Essen
Faculty of Engineering
Institute of Computer Engineering
Prof. Dr.-Ing. Axel Hunger

CSCW and Software Engineering
WS 20012/13
Lecturer: Dr.-Ing. Stefan Werner
11 of 17
8. Virtual Teams and Communication
8.3 Intercultural Communication

The bar chart compares the scores of Indonesia and Germany on the dimensions of PDI, IDV, UAI, and MAS.

- **PDI**
  - Indonesia: 70
  - Germany: 40

- **IDV**
  - Indonesia: 60
  - Germany: 70

- **UAI**
  - Indonesia: 50
  - Germany: 60

- **MAS**
  - Indonesia: 40
  - Germany: 50
Electronic facilitated communication may eliminate evidence of cultural differences by:
- lack of nonverbal communication
  - different ways of dressing, gesticulating and greeting.
- the written media
  - eliminates the effects of accents, language errors

By making cultural differences less noticeable, the medium may thereby increase the perceived similarity among members.
8. Virtual Teams and Communication
8.6 Crisis and Conflict Management

Conflict Prophylaxis

• „Strong“ project leader
  – Contributes to avoiding conflicts or solving them through his authority
  – A weak project leader would rather promote the emergence of conflicts

• Clearly defined tasks and responsibilities

• Information flow
  – Everybody has access to the information necessary for solving his task
  – Goals and backgrounds of the individual works become clear
  – Holding back information consciously or unconsciously boosts conflicts

• Structured decisions

• Clearly defined goals

• Promoting one‘s own initiative and personal responsibility
Typical symptoms of problems in virtual teams

- The team cannot get out of the inception and inclusion stage.
- The team appears to be stuck and is not moving toward execution.
- A few team members seem to be doing all the work.
- Team members do not appear to be applying sufficient effort to the team's task.
- The team misses or almost misses a deadline for deliverables.
- Conflict arises that derails the team's progress.
- Team members who are not co-located seem to be fading into obscurity.
Conflict-diagnosis within the team

- The own goals are overemphasized compared to the goals of the team
- Individual parties within a team deliberately withhold information from each other
- The own interests of individual parties are not unfolded
- The parties systematically apply procedures, which other parties are not able to react to in a suitable way, since they are lacking information and are short of time („surprise strategy“)
- Threats and bluffs are used
- Strategic important positions are defended by the parties with objective and subjective arguments
- High rate of illness, many absences
Conflict-diagnosis within the team-member

- Unusual word meagreness, daydreaming
- Bad mood, unusual irritation
- Many cases of illnesses and absences, often being late
- Few smiles, dejection, melancholy
- Sarcasm
- Walking too slow (or too fast), or getting out of the way