Distance Matters

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# Distributed teams are more likely to:

- Work on new things

- Come from different backgrounds

- Put together by management

- Subject to "out of sight, out of mind"

- Choose only the technologies they are used to

Challenges!

- Blind and invisible work (can't look over shoulders, need explicit coordination)
- Time zones (latitude matters less than longitude)
- Culture (different styles, local references to events)
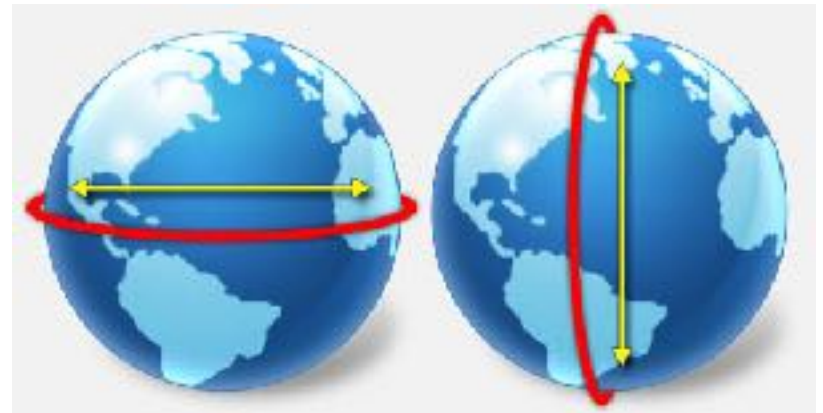
What can managers do?

- Select the right people, promote common ground

- Be mindful of signals they send (e.g., through analytics….)

- Promote the right attitude, build same goals

- Assign work so that collocated people need to do more of the coordination

- Stay in close contact with members

- Have the right technology in place!

And organizations should consider:

- Who gets the credit for what?
- Are there sufficient resources?

CLASSIFICATION OF TECHNOLOGIES TO SUPPORT DISTANCE WORK

Communication Tools	Email and texting Voice and video conferencing Chat rooms, forums, blogs, and wikis Virtual worlds
Coordination Tools	Shared calendars Awareness tools Meeting support Large visual displays Workflow and resource scheduling
Information Repositories	Databases Shared files Blogs or wikis Laboratory notebook (online)
Computational Infrastructure	System architecture The network Large-scale computational resources Human computation

Choosing Technology

- the speed of response
- the size of the message/data
- security
- privacy
- accessibility
- various kinds of control of who can read/write
- the richness of what is transmitted
- the ease of use
- context information like who is doing/did what
- cost
- compatibility with other things used.

Collocated work considerations

- Stage of task

- Spatiality matters (e.g. use of hall walls, use of the "air board", location of flip charts)

- Long term teams

Characteristics of collocated work:

- Rapid feedback
- Multiple channels
- Personal information
- Nuanced information
- Shared local context
- Informal "hall" time before and after
- Coreference (deictic references)
- Individual control
- Implicit cues
- Spatiality of reference

Remote work/learning examples…

- Corporate sites
- Scientific collaboratories
- Moocs
- Globally distributed open source projects

Successes?

- Scientific collaboratory:
  - Simultaneous access to real-time data
  - Archived online discussions
  - Highly user centric
- Software company:
  - Email, video and audio conferencing, file transfer, fax
  - Stable structure, clear ownership boundaries of work
  - Detailed process across sites
  - Stable employees (novices for 2 years)

Failures?

- Audio and shared editor not enough
- Video helped but changed work processes
- Work is generally reorganized to reduce task coupling
- Complaints about quality of audio/video
- New behaviours emerge to compensate
- Video only helpful for negotiation with unambiguous tasks
- Lack of motivation to adopt groupware (Lotus Notes)

Common Ground

- Knowledge that participants have in common, and they are aware that they have it in common

- Participants need to mutually establish what they know or understand

- Lack of common ground, misinterpretations require much time to repair

- People who have good shared common ground, can deal with poor media

http://www.youtube.com/watch?v=rD4roXEY8hk

Media richness matters

- Copresence – same physical environment/artifact access
- Visibility to each other
- Audibility (speech)
- Contemporality (message received immediately)
- Simultaneity – both speakers can send/receive
- Sequentiality – turns cannot get out of sequence
- Reviewability – able to review each other's messages
- Revisability – can revise messages before they are seen

Factors for Establishing & Maintaining Common Ground

Medium	Copresence	Visibility	Audibility	Cotemporality	Simultaneity	Sequentiality	Reviewability	Revisability
Face to face	•	•	•	•	•	•		
Telephone			•	•	•	•		
Video conference		•	•	•	•	•		
Two-way chat				•	•	•	•	•
Answering machine			•				•	
E-mail							•	•
Letter							•	•

Work coupling

- The extent and kind of communication required by the work

- How the work can be decomposed (number of dependencies)

- Tightly coupled work, forming teams is hard to do remotely, so better to do that collocated

Collaboration Readiness

- Rewarded for working together?
- Willingness to share?
- Culture of sharing should be in place first

Technology readiness

- Need skills/resources before using the technologies
- Need willingness to explore new technologies

Technology readiness order

Telephone
Fax
E-mail
Audio conferencing
Voicemail
E-mail with attachments
Video conferencing
Repositories built by others (e.g., intranet sites of static information)
Shared calendaring
Creating repositories
Hand-off collaboration (e.g., using the Tracking Changes option in MS Word)
Simultaneous collaboration (e.g., NetMeeting, Exceed, or Timbuktu screen sharing)

Out of date?

*** Communication Covenant ***

Decide on which:

  Communication tools

  Coordination tools

  Information repositories

  Computational Infrastructure

Discussion points

- Does Github and Slack make distance irrelevant?

- What about our blog?

- What future technologies, how hopeful are you?

Discussion points from our blog…

"Personally, I think this theory waters down the complexity of cultural group dynamics, and the idea that the intricate exchanges of knowledge within a sociocultural group could be forced into a rigid framework seems absurd."

vs.

"I think they should have their members read the part of the article on what individuals and managers need to do to make remote collaboration succeed."

Discussion points from our blog…

About **tools and expectations**…

- Do people read emails? How quickly can a team have an emergency meeting?

- "the computer systems of Github(central database), WordPress (Formal communication) and Slack(Informal Communication) were chosen with CSCW practices in mind."

*"It turns out that the only real issue was being **blind and invisible**. There were times where I was **blind** to what was occurring in the office. More than once, I missed company events and even direct management changes. As it turns out, there were many announcements that were made within the walls of the office. While I'm sure they never had the intention of being non-inclusive, this did still have the effect of making me feel as though I was not apart of the team."*

*I expressly use the **status** as a way to tell others that "this message is on my mind and I'm working on a response" and less so "I've seen it", which in cooperation toward a goal I believe "I'm working on a response" is more useful.*

(how people coopt the seen feature is rather cool, wonder if the designers realized it would be used that way?)

https://href.li/?http://www.hult.edu/blog/benefits-challenges-cultural-diversity-workplace/

"We see the importance of open communication in this article several times; the **US-centred** companies that the authors studied had been rather rude (we'll give them the benefit of the doubt and say unintentionally) to their international colleagues by setting the times of meetings when it was most convenient for them, or frequently including references to things that the international team wouldn't be aware of."

What might the impact be of **competition** between teams in boosting productivity? How to build **trust**?

https://www.researchgate.net/publication/311960305_Understanding_the_Role_of_Achievements_in_Game-Based_Learning

"I think digital motivators might also be an effective way to make collaborative works more successful. This paper showed a slight trend of how placing achievements, digital goals, in a game helped increase performance."

- Understanding the difference between **introverts and extroverts** – should the way we design tools take this into consideration? What impact might that have? What impact does social media have on introverts? "aping beliefs" does this happen on facebook? Better to go off and come up with ideas and then come as a team… but design thinking is against this… unplug… (watch the video!)

- Similarly: "distance work as a great opportunity for introverted people to shine"
- Interesting discussion of the pros/cons of asynchronous discussion – async may help people plan more thoughtfully but leads to latency – other thoughts?

- Impact on our course format?