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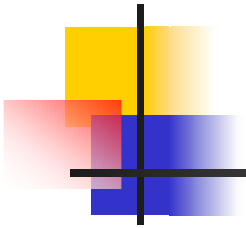
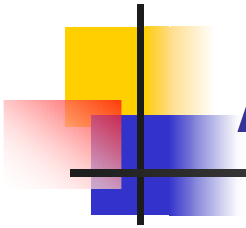
A Software Architecture for Knowledge Acquisition and Retrieval
for Global Distributed Teams



Problem

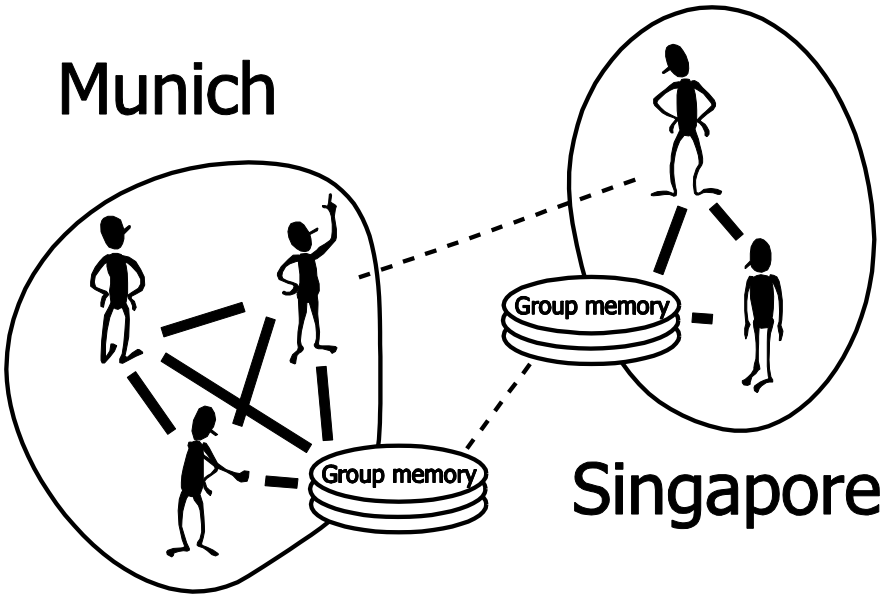
- Global vs. distributed
  - Participants from *different communities*
  - Huge time gaps
- Tools rather support individual developers as opposed to teams
- Knowledge is lost in distributed settings, in particular:
  - Inability to find stakeholders quickly
  - Inability to access knowledge
  - Inability to find artifacts quickly
  - Inability to build "group memory"



Approach/Solution

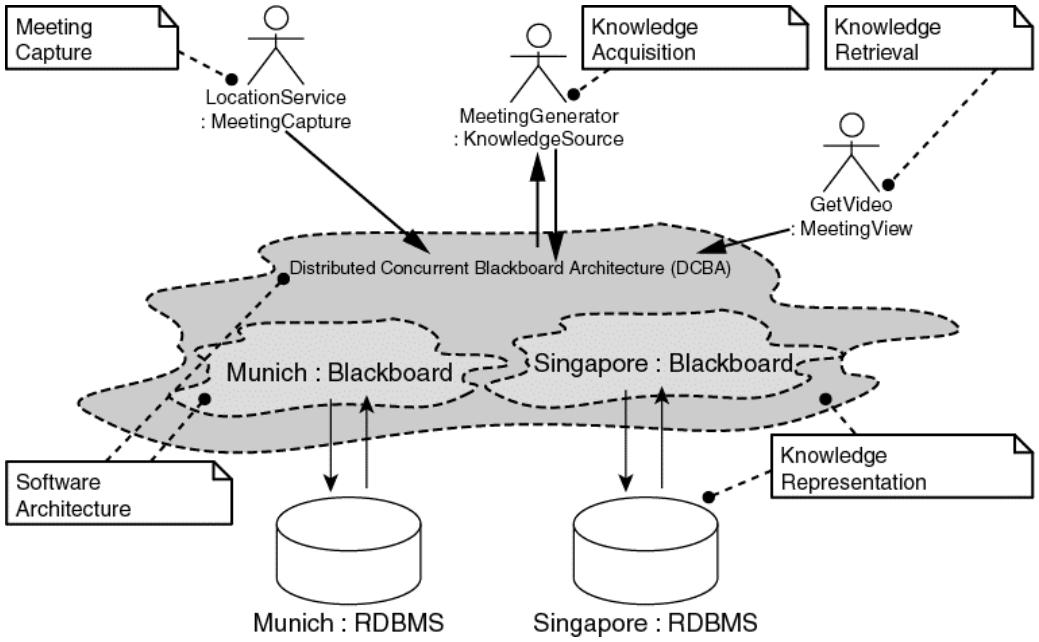
- iBistro is an augmented meeting room
- iBistro‘s software architecture supports balanced teams of developers in GSD
- iBistro links formal and informal knowledge, stakeholders, and balanced teams in a global knowledge repository
- To further evaluate and improve the system, it has been tested in a small university project between Singapore and Munich

Balanced Teams



- Composed of a balance of technical experts, domain experts, and less experienced staff
- Display higher intra-team communication and lower inter-team communication than unbalanced teams
- Most of the inter-team communication is channeled through a small number of communication peers
- This results in higher team performance and greater potential for distributed work.

The Distributed Concurrent Blackboard Architecture (DCBA)



- Transparent access
- Based on the blackboard style
- Components support:
  - Knowledge Capture
  - Knowledge Acquisition
  - Knowledge Retrieval
  - Knowledge Representation

Lessons Learned

- Support for teams rather than individual developers
  - Supports the local team
  - Explicit communication and knowledge
  - Supports management (supervisors)
- Better collaboration in global settings
  - Deals well with large time-shifts
  - Supports synchronous and asynchronous communication
- Transparent work process and knowledge acquisition
  - Reduced privacy
  - Technology dependency