Wisdom is not the product of schooling but the lifelong attempt to acquire it.
- Albert Einstein

Organizational Memories

“Those who cannot remember the past are condemned to repeat it.”
George Santayana

Gerhard Fischer and Leysia Palen
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Organizational Learning

- **organizational learning** focuses
  - on recording knowledge (primarily informal knowledge, tacit knowledge)
  - gained through experience (in the short term), and subsequently making that knowledge available to others when it is relevant to their work (in the long term)

- create “organizational/corporate/group/artifact” memories where knowledge and improvisations can be captured and made part of the collective knowledge base

- principles for helping organizations use what they know
  - capture a significant proportion of the knowledge that practitioners generate in their work
  - develop a culture in which individuals see their efforts as part of the larger process of building the organization’s capabilities
    * updating the organizational memory through new lessons gleaned from practice
    * updating the organizational memory through organizational reflection, in which the raw knowledge from practice is sifted, synthesized, and elaborated
    * delivering the knowledge in the organizational memory as it is required: relevance to the task at hand, learning on demand, performance support, training, ........
  - develop mechanisms to deliver and acquire knowledge that respect or, better, improve upon the work processes in which practitioners already engage (socio-technical aspect)
A Group has No Head: The Need for Organizational Memories

• distributed cognition emphasizes that the heart of intelligent human performance is not the individual human mind but groups of minds in interaction with each other and minds in interactions with tools and artifacts

• distributed cognition between the individual human mind and artifacts (such as memory systems) often function well, because the required knowledge which an individual needs is distributed between her/his head and the world (for example: an address book, a folder system of e-mail messages, a file system, ........... )

• a group has no head — therefore externalizations are critically more important for organizational learning than for individual learning

• externalizations
  - create a record of our mental efforts, one that is “outside us” rather than vaguely in memory
  - represent situations which can talk back to us, which can be critiqued and negotiated
  - embody our thoughts and intentions in a form more accessible to reflective efforts

• knowledge is the key asset of the knowledge organization ----> organizational memory extends and amplifies this asset by capturing, organizing, disseminating, and reusing the knowledge created by its employees
An Example of an Organizational Memory:
— The Group Interactive Memory Manager (GIMME)

An Organizational Learning Cycle
—
Keeping Users Involved and Interested

Examples of Organizational Memory Systems


- **Design Rationale Systems**
Barriers for Organizational Memories

• **challenge:** how to capture *informal and tacit* knowledge

• **possible solutions:** groupware tools such as e-mail, Lotus Notes
  - externalize informal knowledge
  - fail to create a coherent organizational memory

• **factors why many organizational memory attempts have failed:**
  - require additional documentation effort with no clear short term benefit
    (“who is the beneficiary and who has to do the work”)
  - do not provide an effective index or structure to the mass of information
    collected in the system

• **utility** = \[\text{value} \over \text{effort}\]

  **Examples:** GIMME, Andreas Girgensohn’s video library, design rationale systems, DODEs
Additional Issues for Organizational Memories

• how can effort be reduced:
  - usage data
  - embedded communication
  - capturing information without additional effort by users (GIMME)
  - incremental formalization

• effort distribution

<table>
<thead>
<tr>
<th>creating information for the OM</th>
<th>using the O</th>
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<tbody>
<tr>
<td>storing a message</td>
<td>retrieving a message</td>
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<tr>
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<td>information access and/or</td>
</tr>
<tr>
<td>additional structuring effort</td>
<td>information delivery</td>
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<tr>
<td>processing at read time</td>
<td>processing at question time</td>
</tr>
</tbody>
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Fischer / Palen, Spring 1999
Collaboratively Constructed and Evolved Organizational Memories

• **Gamelan**
  - content: Java applets (an evolving community repositories of knowledge)
  - users: Java developers
  - http://www.gamelan.com

• **Educational Object Economy**
  - content: Java objects designed specifically for education
  - users: teachers and developers interested in producing educational software
  - http://www.eoe.org

• **Netscape Communicator**
  - distributed development and centralized integration
  - http://www.mozilla.org

• **Cathedral and Bazaar**
  - Linux operating system
  - http://earthspace.net/~esr/writings/cathedral-bazaar/cathedral-bazaar.html
Collaboratively Constructed and Evolved Organizational Memories — continued


- **Expert Exchange** — http://www.experts-exchange.com/ (see lecture on “collaborative learning”)

- **Behavior Exchange** — http://agentsheets.cs.colorado.edu/Behavior-Exchange/Home ---> the idea of the Behavior Exchange is to empower a distributed community of people to design, build, and share agents as components for interactive SimCity™-like simulations. The Behavior Exchange is a community repository that acts like an ever growing box of LEGO™ pieces designed and improved by the members of the community.

- **Dynasites’ Community Space** for the Design, Learning and Collaboration class; Spring 99

- **Personas Project**

- **ePost-it Project**