Towards more Interactive Presentations with OpenOffice.org

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Agenda

- About the speakers
- Teaching scenarios
- Related work
- Introduction to project NUSS (Notebook University Stuttgart)
- Shared OpenOffice.org
- Demo of prototype
- Experiences
- Summary, Future Work
About the speakers

Dr. Cora Burger
Research assistant
at the University of Stuttgart
Teaching and research in the areas:
Distributed Systems
Groupware, Communityware
E-Learning

Michael Reinsch
Studying Software Engineering
at the University of Stuttgart
Works for project NUSS*
(Notebook University Stuttgart)
and ITO*
(Information Technology Online)

* Funded by German Ministry for Research
Current situation

Teaching results depend on **active participation** of students

Lecturer

- Not used to getting many contributions
- Unable to keep track in large audiences

Students

- Not used to being involved
- Fear to disgrace oneself

How to increase interactivity?
NUSS (Notebook University Stuttgart)*

Goal:
Explore potential of notebooks and wireless connections
to increase interactivity in teaching

Partners (Univ. of Stuttgart):
- IPVS Dep. Distributed Systems, Computing Center (RUS)
- Department of Pedagogy
- Further institutes

Competencies:
- Technology
- Didactic, evaluation
- Application in teaching

* Funded by German Ministry for Research
Target situation

Portable devices + wireless connection
Application sharing e.g. presentation of slides
Collaboration among lecturer and students:
  - Incremental completion of slides
  - Append public annotations
  - Usage of tele-pointer

Students
  - Categorize contributions
  - Private annotations

Whole lecture is recorded
Requirements

Interactivity
- Remote control of applications
- Annotations, tele-pointers
- Context sensitive contributions $\rightarrow$ categorization

Techniques involved
- Identification of lecture context (applications, participants etc.)
- Distributing and storing data (application, annotation, contribution)
- Roles and permissions

General
- Platform independent
- No cost
## Examples of existing products

<table>
<thead>
<tr>
<th>Feature</th>
<th>Conference</th>
<th>X-Mbone Tools</th>
<th>Virtual Networking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote Control</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Annotation, Tele-pointer</td>
<td>Private annotation</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Context Sensitive Contribution, Categorization</td>
<td>Predefined contributors</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Identify Lecture Context</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Data Transfer &amp; Storing</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Roles &amp; Permissions</td>
<td>Teacher Students</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Platform Independence</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>No Cost</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
NUSS architecture

Legend:
- **Existing product**
- **Wrapper**
- **Helper Service**
- **Infrastructure**

- OpenOffice.org
- PowerPoint
- Multicast VNC
- Whiteboard
- Audio
- Simulation/Validation of protocols

- Context Sensitive Contributions and their Categorization
- Recording
- Administration GUI

**NUSS Access Point (NAP) includ. Management of Permissions**

Department
Distributed Systems
Shared OpenOffice.org

- Implementation goals:
  - No modifications to OpenOffice.org
  - Complete remote control for all OpenOffice.org components
  - Integration into NUSS

- Design decision:
  - Usage of JAVA
  - Remote Control of OpenOffice.org

- Components of Shared OpenOffice.org:
  - Interactive Presentation Assistant
  - Remote Control Server
Interactive Presentation Assistant

OpenOffice.org

Lecturer and students can (similar to Shared PowerPoint):

- Follow hyperlinks, use pencil, append text, change color etc.
- Modify annotations, objects or point
- Apply for roles and permissions

Actions are reported to Remote Control Server via OpenOffice.org model
Remote Control Server

- Start OpenOffice.org with special parameter
- Remote Control Server
  - connects to OpenOffice.org entities via UNO bridge
    - Reliable connections
  - registers Event Listeners
    with OpenOffice.org models
- Upon notification from model:
  - Examine changed object
  - Broadcast changes
    to other OpenOffice.org models
    Broadcast messages:
      - Object ID + object properties
- Upon notification from other server:
  - Apply change to OpenOffice.org model
Current State

Design of Interactive Presentation Assistant

- Reuse of similar functionality from Shared PowerPoint

Prototype of Remote Control Server

- 1:N communication
- One control server
- Presentation only
- Simple shapes like rectangle, ellipse, etc.
- No distribution of existing presentation yet

Demo
Experiences with OpenOffice.org API

Notification mechanism really useful
Feature rich API
Would be of help for sharing purposes:
- Object ID for every component
- Object references should never change
- More comfortable way to examine objects
- A unified way to retrieve all properties of a component, e.g. size and position for Xshape
- Serializable enums and structs
Experiences during Winter Term 2002/03

- Analogous tool for PowerPoint well received by students
- Helped to overcome students’ inhibitions
- Vivid discussions
- Intensive treatment of material
  → better focus
- In case of problems with hard- and software:
  increased distraction
Summary

- Shared OpenOffice.org can be used for
  - Shared whiteboard
  - Shared presentation
  - Enhanced presentation features
    (collaborative completion, annotation, background contribution, recording)
- Usage of existing NUSS infrastructure

Interactivity increased
Future work

- Combine Shared OpenOffice.org and Shared PowerPoint
- Experiments during summer term 2003

→ Develop platform independent, interactive presentations and collaborative work
Links & Questions

OpenOffice: http://www.OpenOffice.org/

Notebook University Stuttgart:
  http://www.informatik.uni-stuttgart.de/ipvs/vs/en/projects/NUSS/

Information Technology Online:
  http://iasc88.ias.uni-stuttgart.de/ito/

Questions?
Didactic Viewpoint

Lectures: Incremental completion of slides
Exercises: Remote control