University of Stuttgart

Institute of Parallel and
Distributed Systems (IPVS)

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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

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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)

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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?

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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

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Target situation

Portable devices + wireless connection

Application sharing e. g. presentation of slides

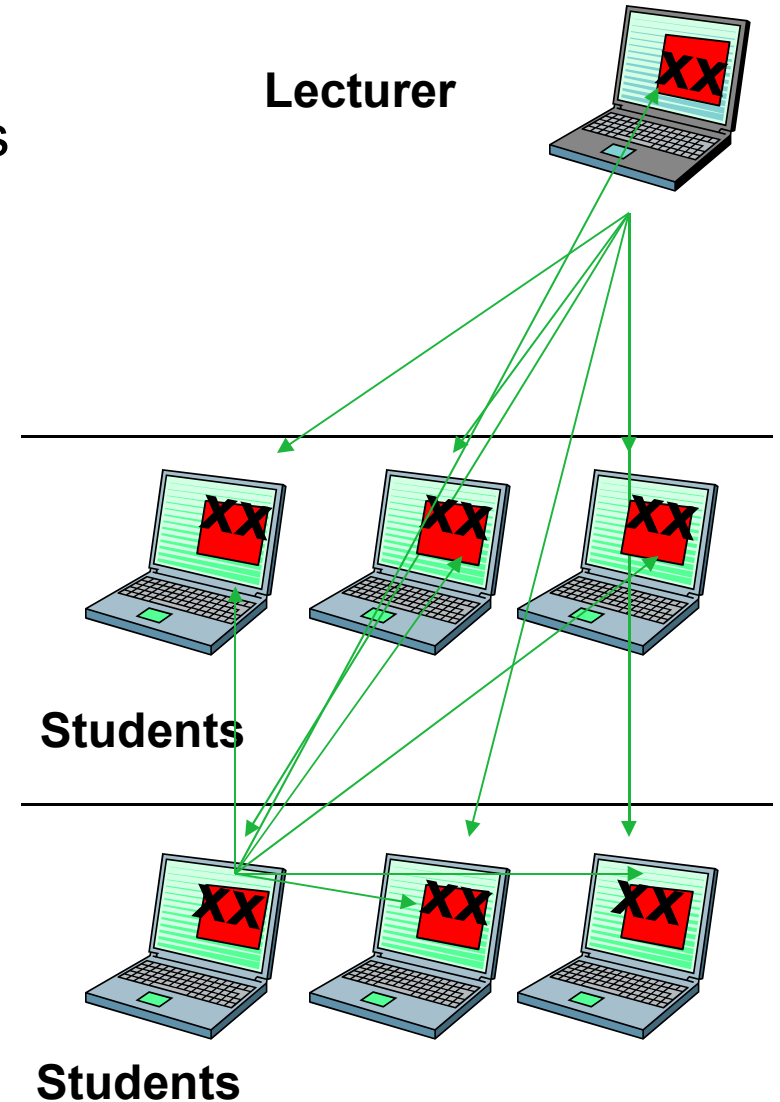Collaboration among lecturer and students:

- Incremental completion of slides
- Append public annotations
- Usage of tele-pointer

Students

- Categorize contributions
- Private annotations

Whole lecture is recorded

Lecturer

Students

Students

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)
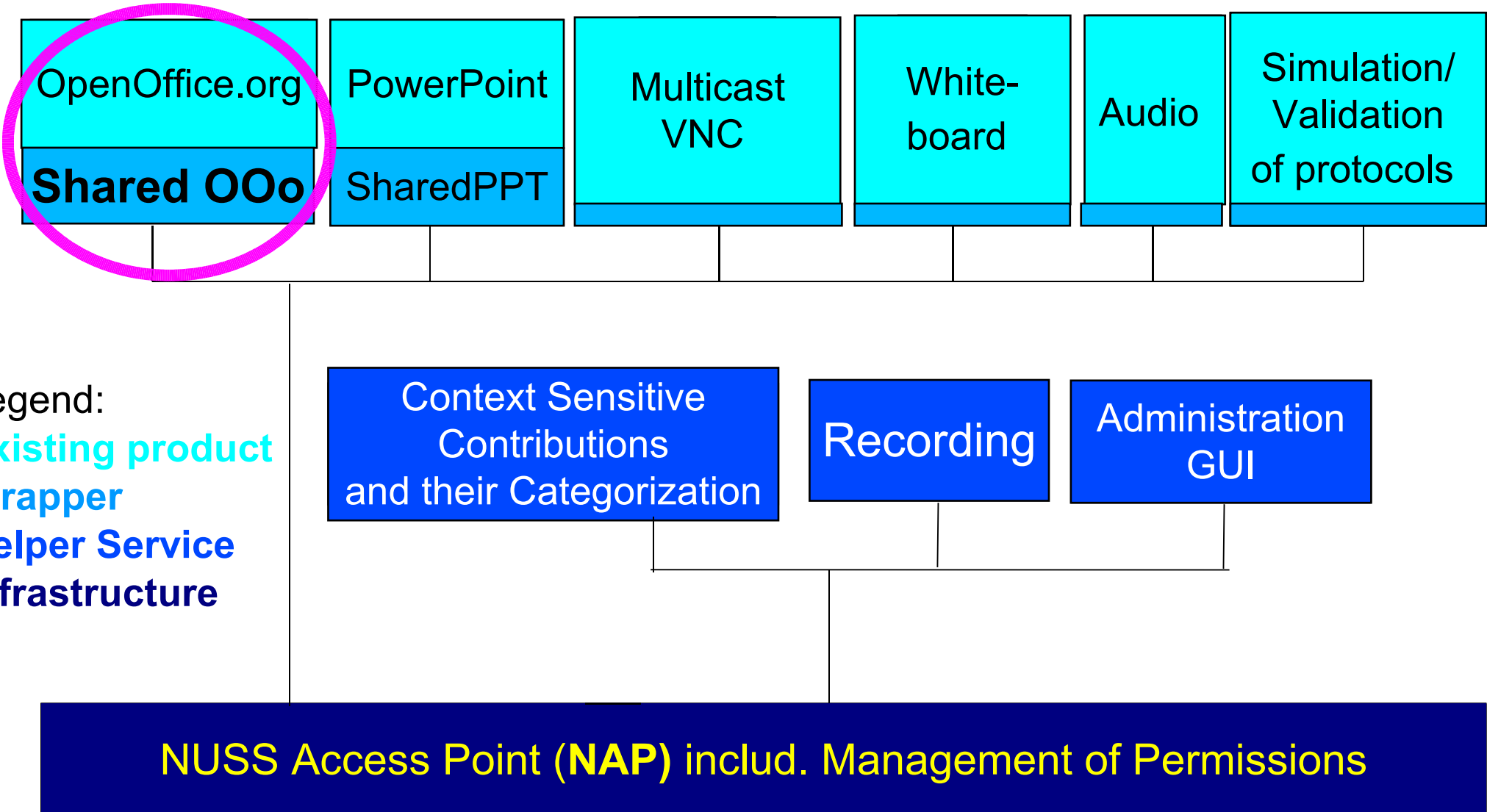
- Roles and permissions

General

- Platform independent

- No cost

Examples of existing products

	Conference XP	MBone Tools	Virtual Network Computing
Remote Control	No	No	Yes
Annotation, Tele-pointer	Private annotation	Yes	No
Context Sensitive Contribution, Categorization	Predefined contributions	No	No
Identify Lecture Context	Yes	Yes	Yes
Data Transfer & Storing	Transfer: Yes Storing: Not yet	Yes	Yes
Roles & Permissions	Teacher Students	No	No
Platform Independence	No	Yes	Yes
No Cost	Yes	Yes	Yes

NUSS architecture

OpenOffice.org
Shared OOo

PowerPoint
SharedPPT

Multicast VNC

White-board

Audio

Simulation/ Validation of protocols

Legend:
Existing product
Wrapper
Helper Service
Infrastructure

Context Sensitive Contributions and their Categorization

Recording

Administration GUI

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

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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

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Interactive Presentation Assistant

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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

OpenOffice.org Impress	OpenOffice.org Impress

Control   Events   Control

Remote Control Server

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

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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

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Future work

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

→ Develop platform independent, interactive presentations and collaborative work

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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?

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Didactic Viewpoint

Lectures: Incremental completion of slides

Exercises: Remote control

Aufzeichnung von Fensterströmen

Aufzeichnungsalternativen:

1. Anwendungsspezifische Operationen
2. Interne Fensterereignisse (Betriebssystem)
3. Snapshot bei Änderung des Fensterinhalts
4. Periodischer Snapshot des Fensterinhalts

Vor-/Nachteile:

Alternative	Speicherbedarf	Ressourcen-verfügbarkeit	Anforderung an Anwendung
1			
2			
3			
4			

6.2 Kooperationsunterstützung: Konferenzsysteme, gemeinsam genutzte Anwendungen   20

Aufzeichnung von Fensterströmen

Aufzeichnungsalternativen:

Operationen (z. B. Mausklick)   *Anwendung*

Interne Fensterereignisse   *OS*

Snapshot bei Änderung des Fensterinhalts

Periodischer Snapshot des Fensterinhalts

Vor-/Nachteile:

Alternative	Speicherbedarf	Ressourcen-verfügbarkeit	Anforderung an Anwendung
1	*nicht sehr viel*	*ja*	*integration*
2	*wenig (ausser man überträgt einen paint)*	*ja*	*keine*
3	*sehr viel*	*nein*	*keine*
4	*auch sehr viel*	*nein*	*keine*

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