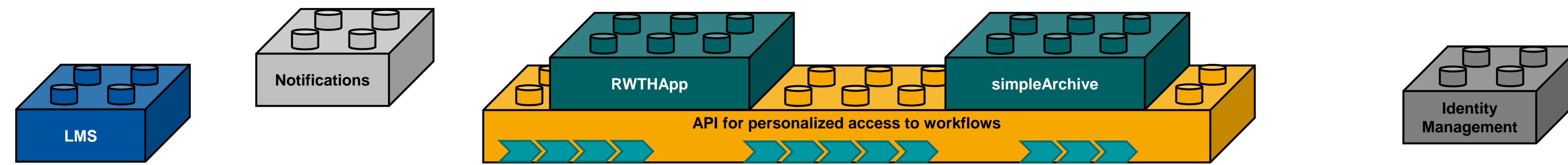


From eLearning to eScience: Building a Service Oriented Architecture to Support Research

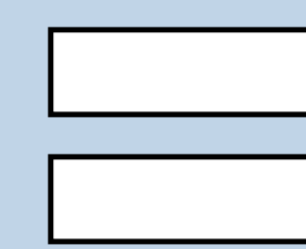
Marius Politze, Thomas Eifert
RWTH Aachen University



Conceptual Model for eLearning Applications

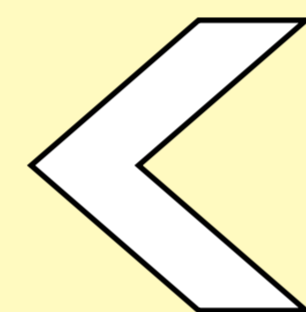
Users of the services

- Students and teachers
- Typically 20-100 sometimes up to 1500
- Require invitation of externals.



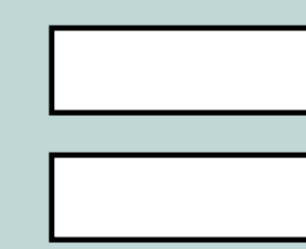
Kind of data

- Small and standardized: slides, scripts or homework
- Recently also 1-2 GB video recordings



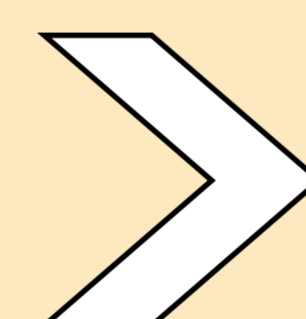
Kind of services and applications

- Distribution of learning materials and contacting students
- Individualized applications (web applications or mobile apps)
 - online programming environments
 - audience response systems



Maturity of the processes

- Teaching styles and didactics vary
- lifecycle and eLearning processes are well understood
- Faculties develop specific methodologies
- use existing IT services to enhance their processes



Conceptual Model for eScience Applications

Users of the services

- National and international collaboration
- Research groups with as few as ten members and clusters with more than 100 researchers
- From various universities and research facilities

Kind of data

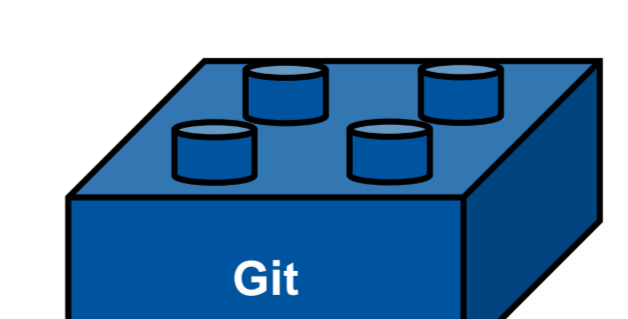
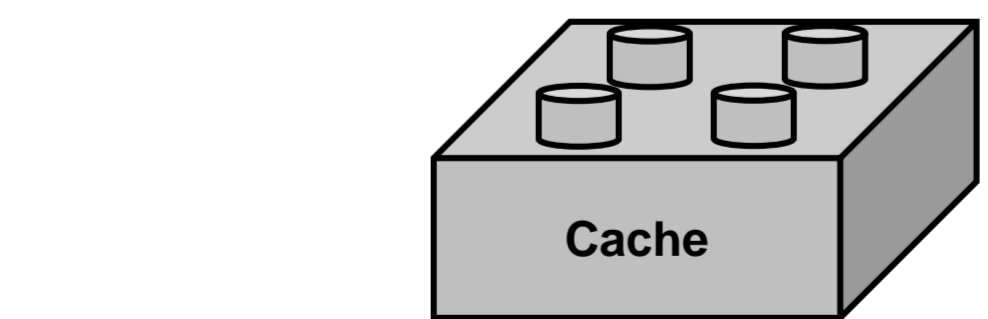
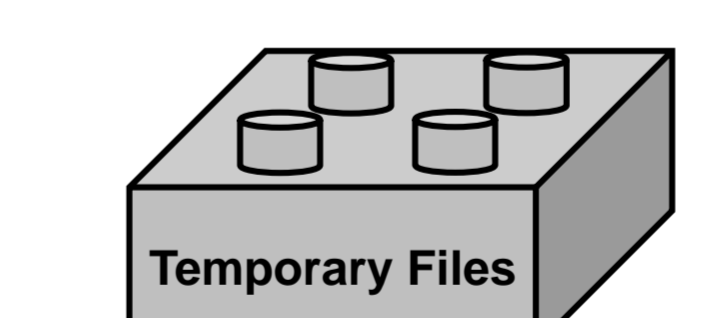
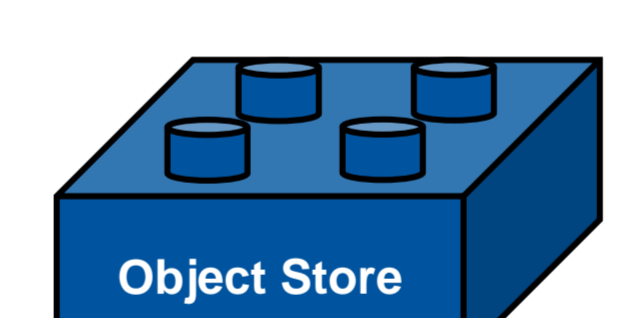
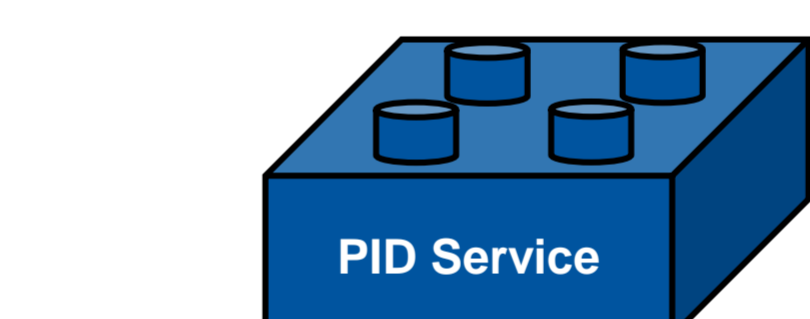
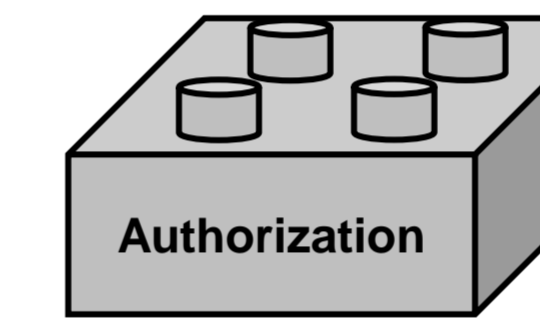
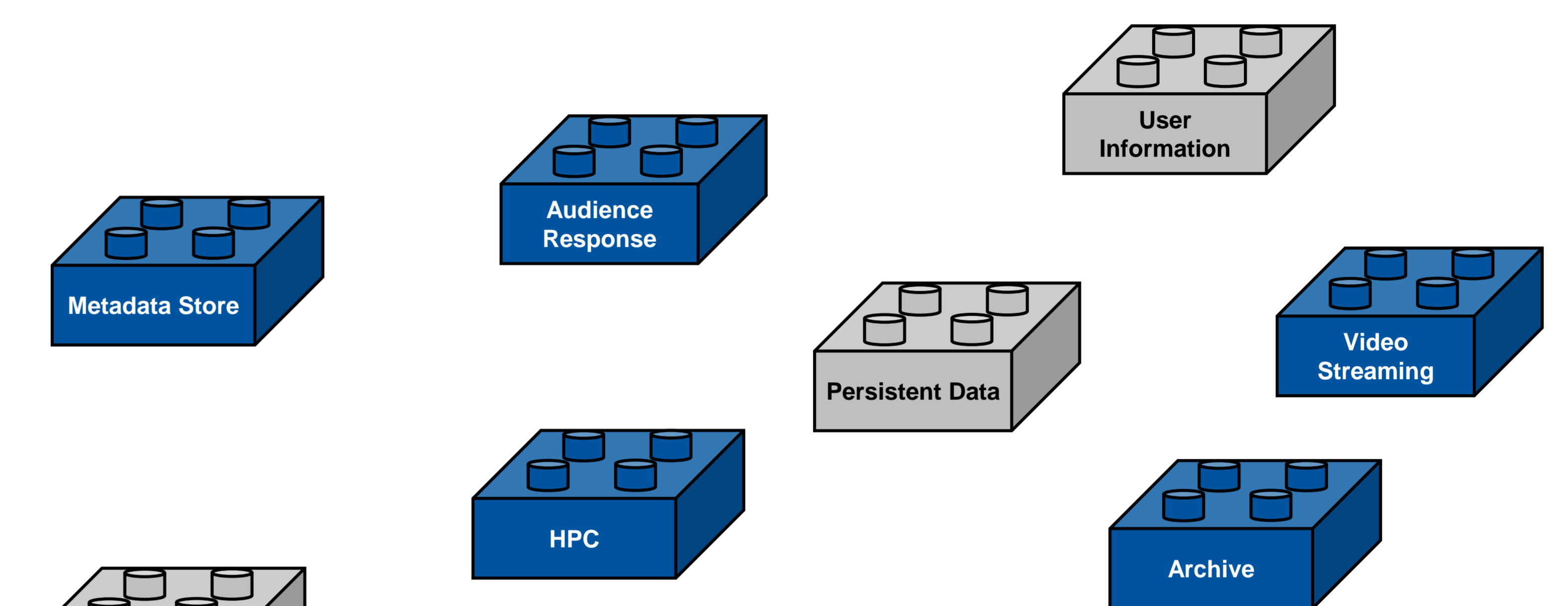
- Very heterogeneous and mostly disciplines specific
- Varies greatly in file sizes and count
- Documents: papers, grant applications or dissertations

Kind of services and applications

- Centralized services focus on archival and publishing
- Not only researchers, also technical personnel use services
- Decentralized discipline-specific applications, services and implementations are common

Maturity of the processes

- Research groups follow individual research processes
- Connections to administrations are mostly about funding
- Improvements of the research process remain in the research group, only few coordinate with others



Case Study: simpleArchive

The project simpleArchive serves as a case study to validate how the conceptual model influences the development of an IT service supporting the research process.

The process combines a tape archive, PID service and temporary downloads allowing researchers to easily archive, retrieve and share research data.

