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Institute for Geoinformatics
University of Münster

Pay-per-Use Revenue Models for Geoprocessing Services in the Cloud

B. Baranski*, T. Deelmann and B. Schäffer

Institute for Geoinformatics
University of Münster, Germany

Agenda

- Motivation
- Requirements
- System Design
- Demonstration
- Conclusion

Motivation

- Evolution of GIS
  - data- and desktop-centric GIS
  - emerging technologies (SOA, web services)
  - Spatial Data Infrastructure (SDI) concept
- Geoprocessing
  - OGC Web Processing Service (WPS)
  - proprietary and complex desktop-software
  - increasing amount of data and higher requirements on adopted algorithms

Challenges

- Quality of Service (QoS)
  - INSPIRE QoS requirements
- Cloud Computing
  - general trend in mainstream-IT
  - on-demand resource provisioning
  - pay-per-use revenue models
  - no up-front infrastructure investments

➢ Emerging Business Models

Goal

- Design a system that
  - enables (OGC-) service providers to provide sustainable pay-per-use business models
    - define usage costs per service request, service uptime, accessed resource, executed process, amount of processed data, etc.
  - enables (OGC-) service consumers to compare cost-benefit ratio of different service offerings

➢ Applicable for all kind of (OGC-) services … but focus on Geoprocessing Services

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Requirements

- Payment Models
  - flatrate *vs.* pay-per-use
- Contract Models
  - click-through licenses *vs.* long term contracts
- Accounting Models
  - post-paid *vs.* pre-paid
- Pricing Models

Requirements

- Publish-Find-Bind
  - additional agree phase (Publish-Find-Agree-Bind)
- OGC Technical Baseline
  - existing client and service implementations *should* remain unchanged
- Security and Trust
  - authentication, authorization, confidentiality, integrity, non-repudiation, protection and privacy

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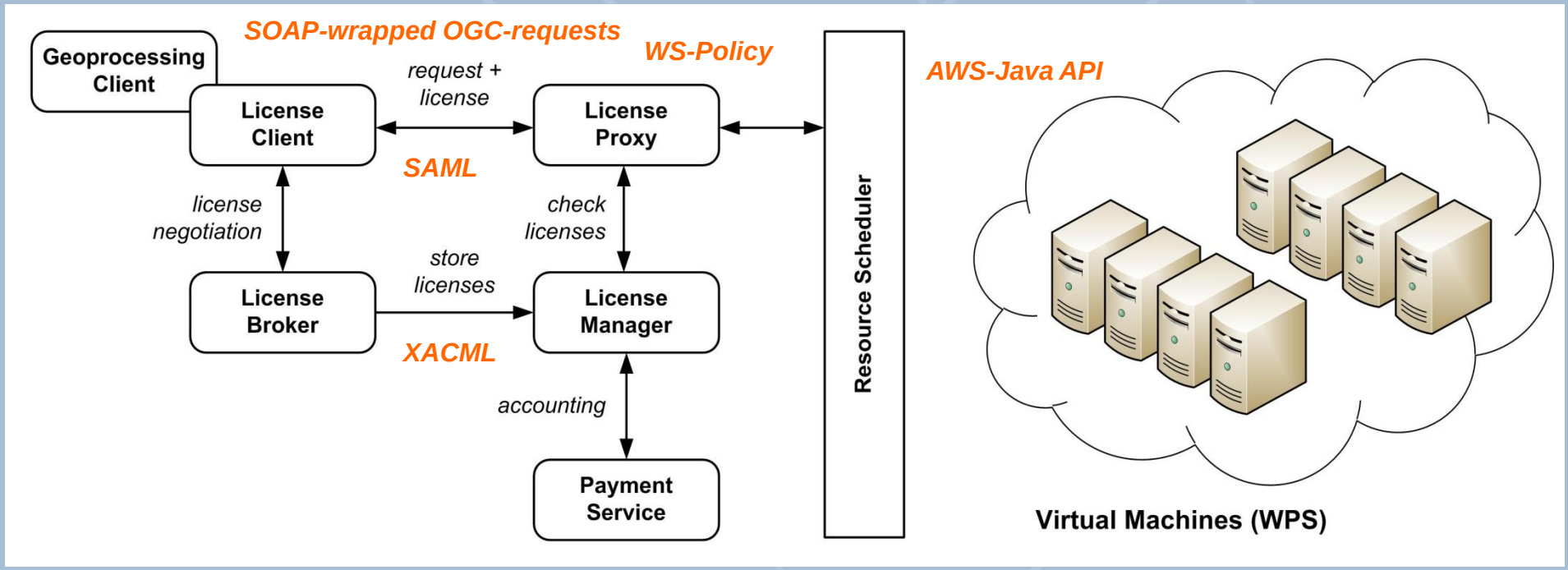
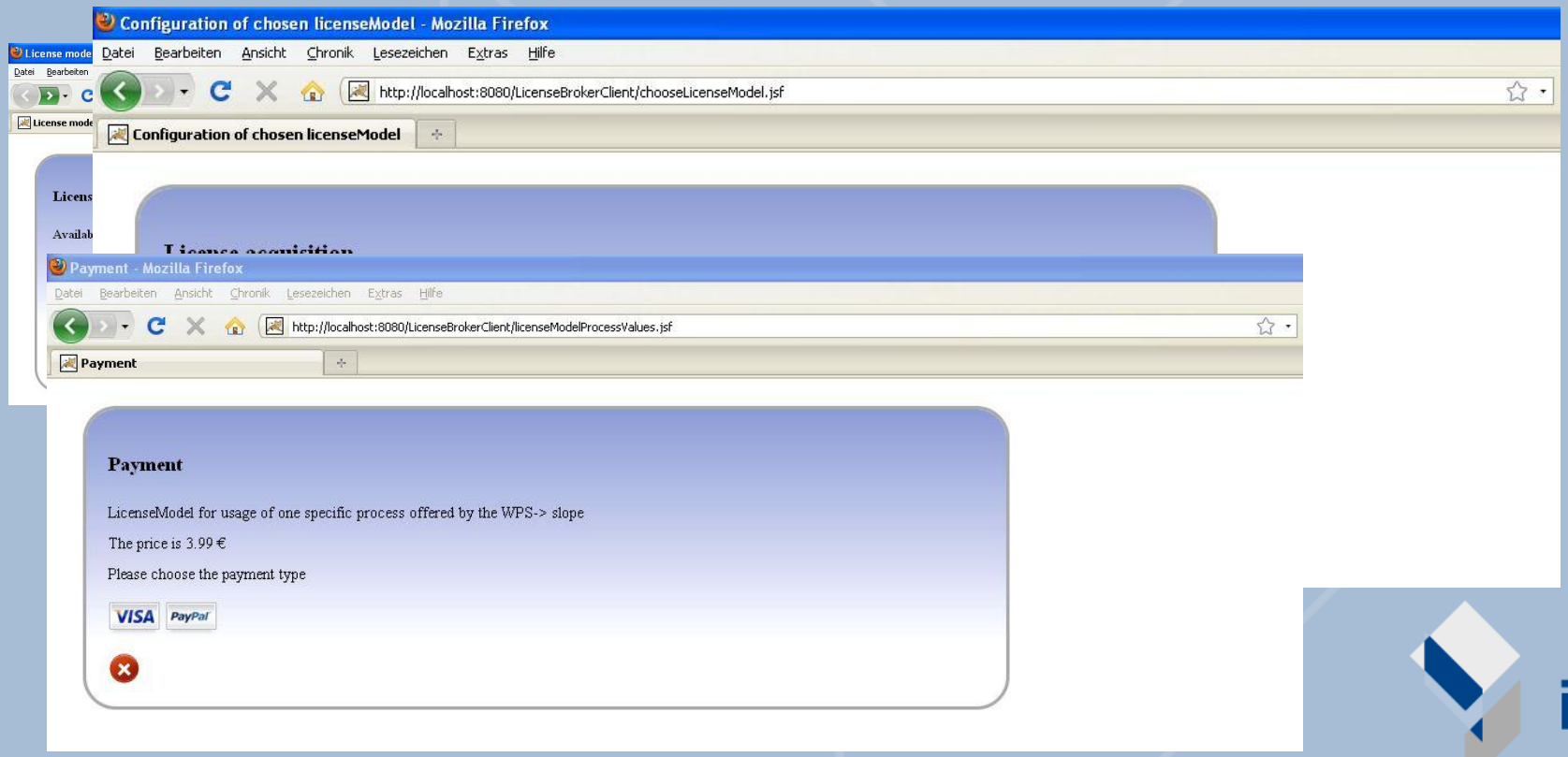
System Design

- Policy-Based Management Architecture
- OGC GeoDRM RM / OGC-Testbeds



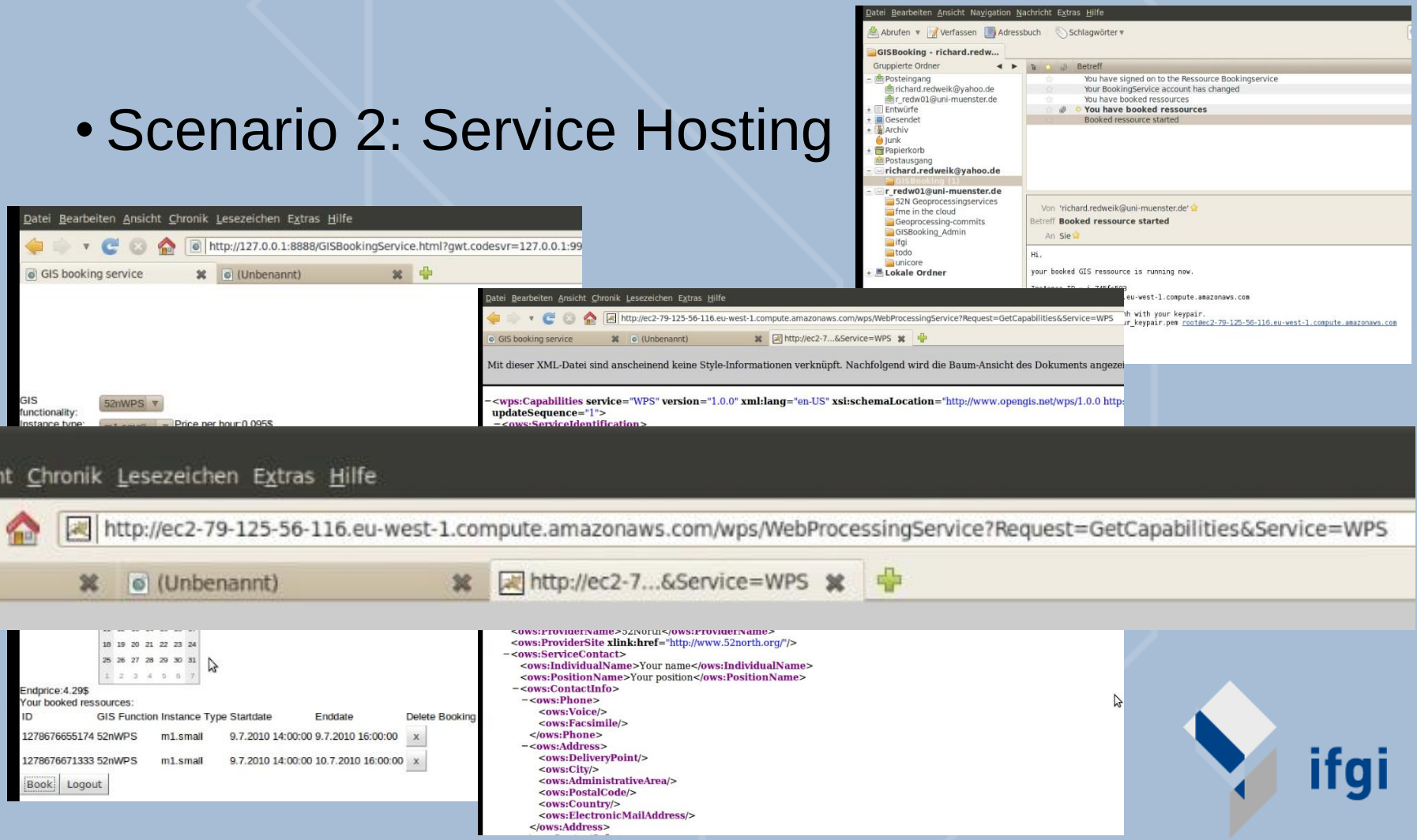
Demonstration

- Scenario 1: Pay-per-*“Process-Execution“*



Demonstration

- Scenario 2: Service Hosting



Conclusion

- Design a system that
  - enables service providers to provide sustainable pay-per-use business models
  - Enables service consumers to compare cost-benefit ratio of different service offerings
- Impact on SDIs
  - technological shift vs. paradigm change
  - new business opportunities
    - for small companies (no up-front investments)
    - *real* Software as a Service (SaaS)

➢ Cloud Computing as enabling technologie!

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Conclusion

- Open Issues
  - Cloud Computing
    - interoperability
    - reliability
    - security
  - Business Models
    - software licenses

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Thank you for your time!

Bastian Baranski
bastian.baranski@uni-muenster.de