

Towards a federated learning environment for three dutch universities

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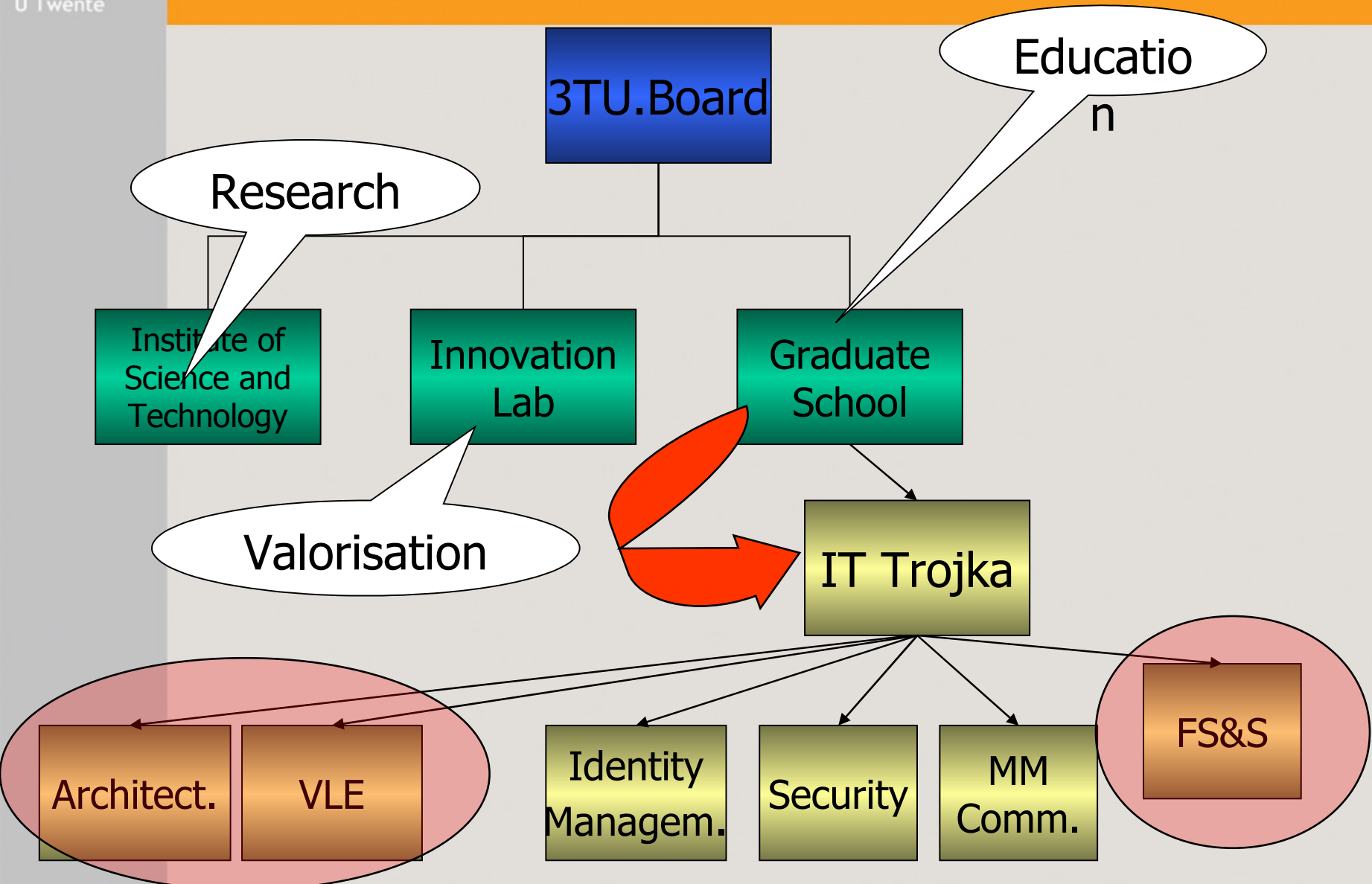
Agenda

- The federation 3TU.
- Their ambition to have a federated Virtual Learning Environment in 2011
- The role of Enterprise Architecture
- First results
- Work in progress
- Lessons learned
- Some challenges

About 3TU.

- **Universities** of Delft, Eindhoven, Twente
- Federation since february 7th, 2007
- Main goal: stronger international position in education and research
- 9.000 staff, > 28.000 students
- Collaboration in 3TU. Graduate School
- 5 joint MSC programmes (since 2006)
- Considerable differences in Size, Culture, Organizational structure, IT Governance, IT environments, applications etc.

3TU. Federation (february 7, 2007)



3TU. MSc student

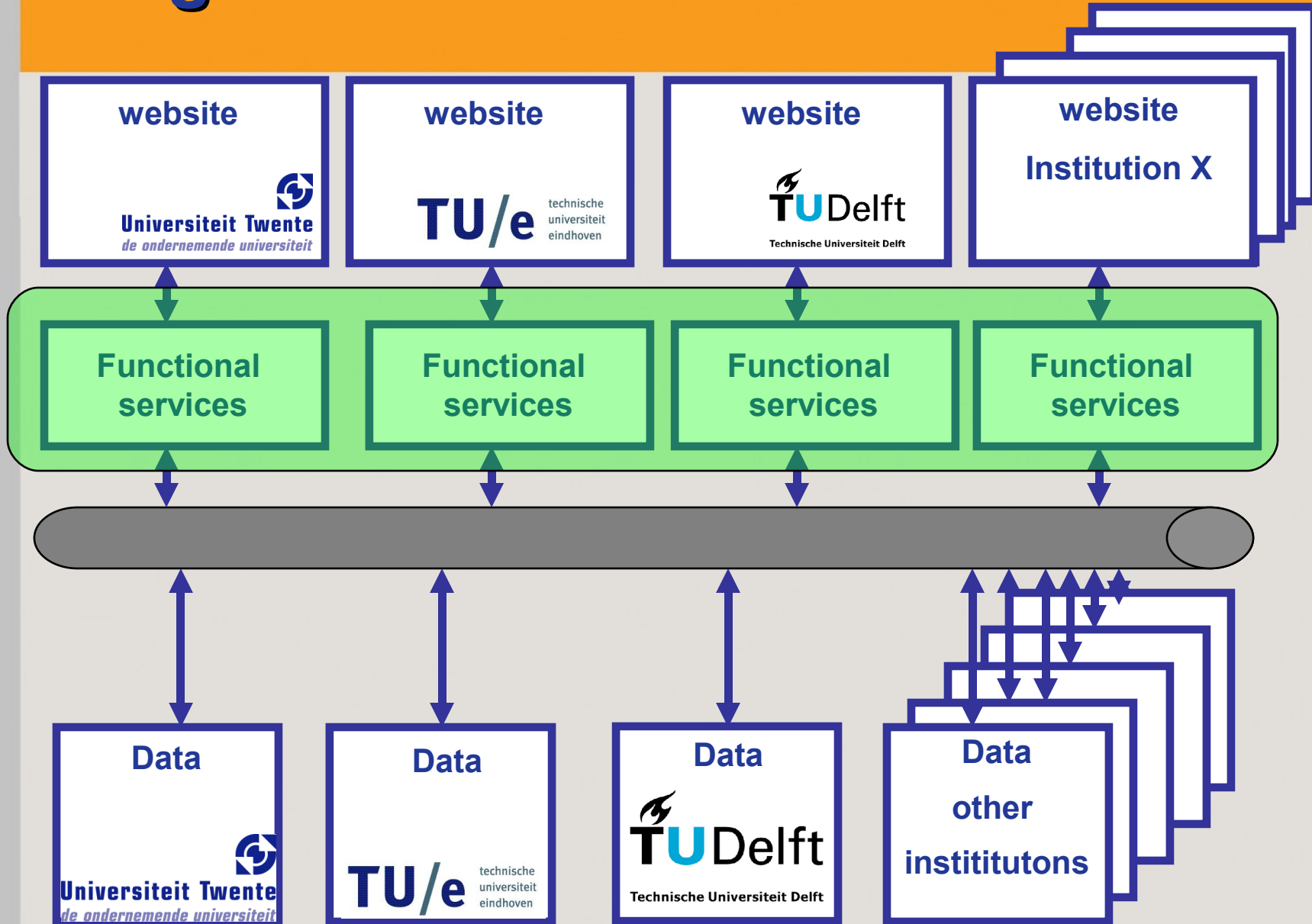
- Enrolls in a joint Masters programme
- Worst case:
 - Subjects in 3 universities
 - 3 different ELO's
 - 3 different portals
 - 3 different UserID's
 - No integration of course catalogues, student results, ...

The solution

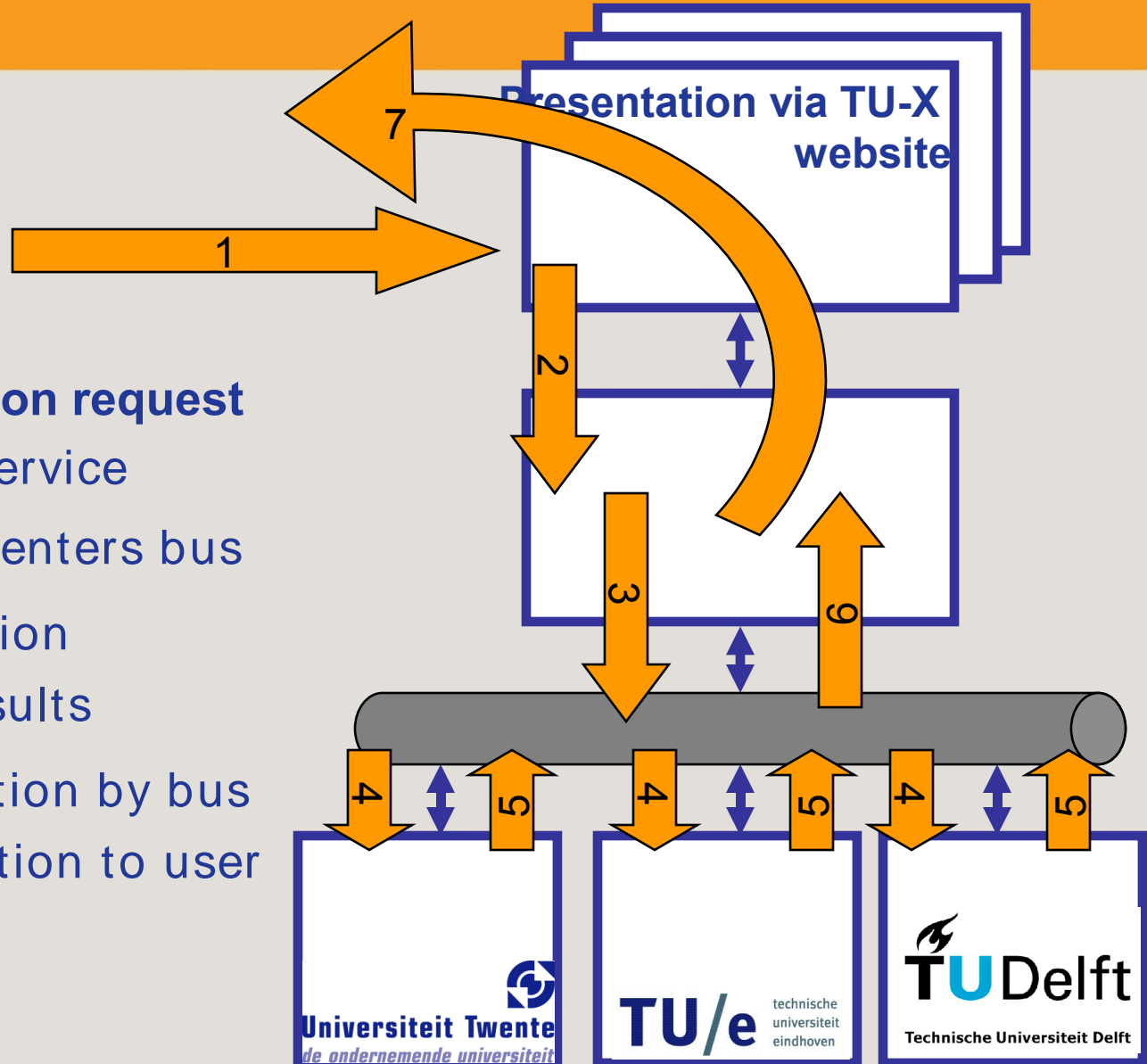
**Ambition of 3TU.Graduate School:
A federated VLE, available in 2011**

**Use existing infrastructure
Integration based on SOA
3 portals with identical functionality
Standardized data objects
Archimate as a modelling language**

Target architecture



The main idea

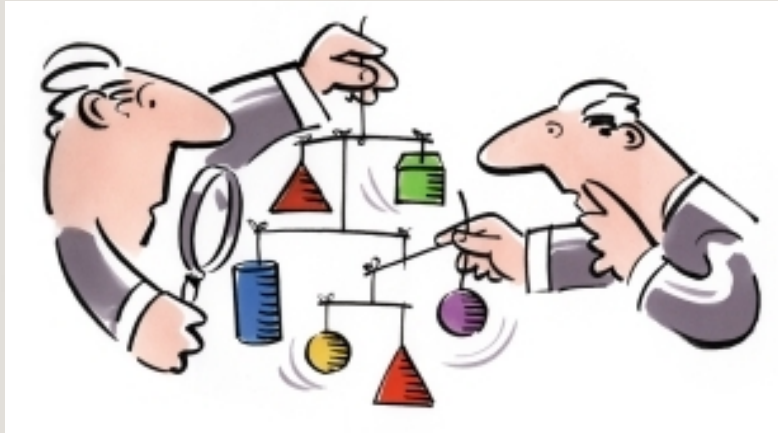


1. Information request
2. Invoke service
3. Request enters bus
4. Distribution
5. Local results
6. Aggregation by bus
7. Presentation to user

Methods

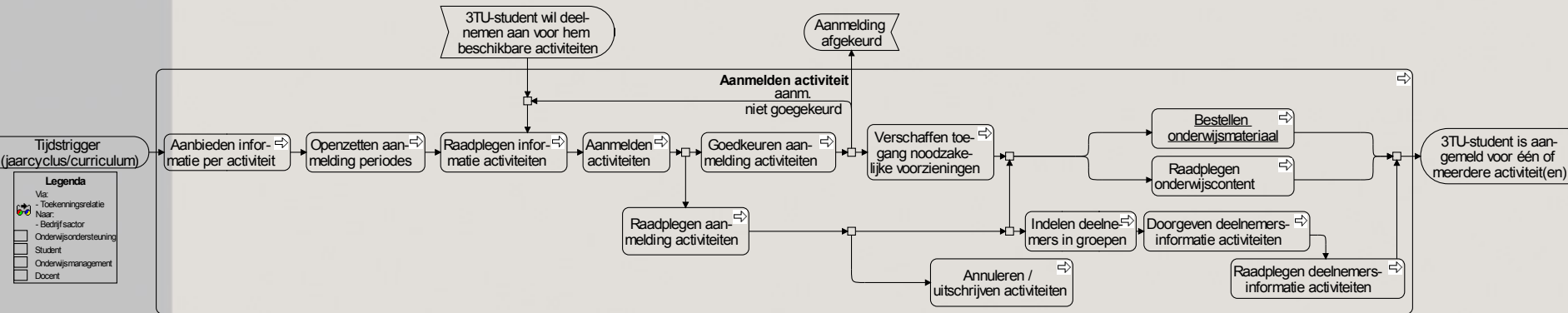
- Adoption of Service Oriented Architecture (SOA)
- Adoption of ArchiMate framework, modelling language, tools (BiZZdesign Architect)
- Determination of Architectural principles
- Top down design of processes and functional services

With a little help



BiZZdesign

SURF FOUNDATION



Phase I: modelling

- Professional Enterprise Architects
- 6 most important processes
- Deliverables:
 - Process models
 - Services
 - Data objects
 - Views
 - Standards
- Validation by students and staff

Results: Events, Process, Actors

- Follow activity (general)
- More detailed

Legenda

Via:

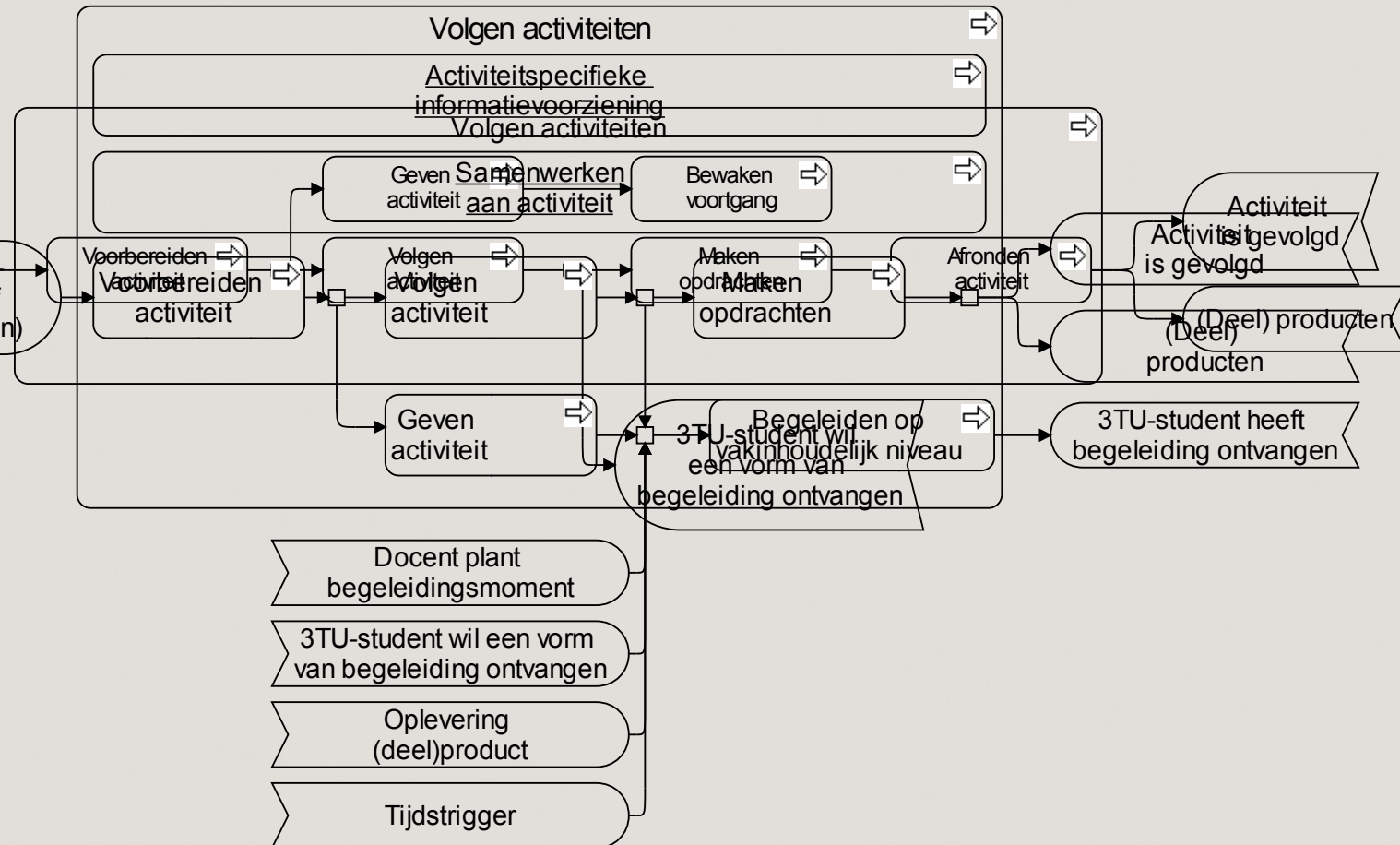
- Toekenningrelatie

Naar:

- Bedrijfsactor

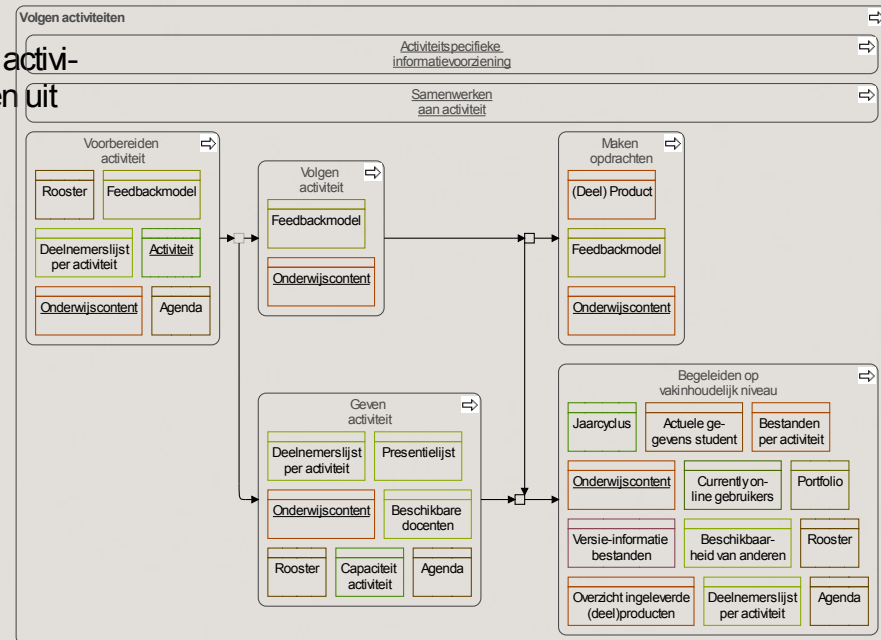
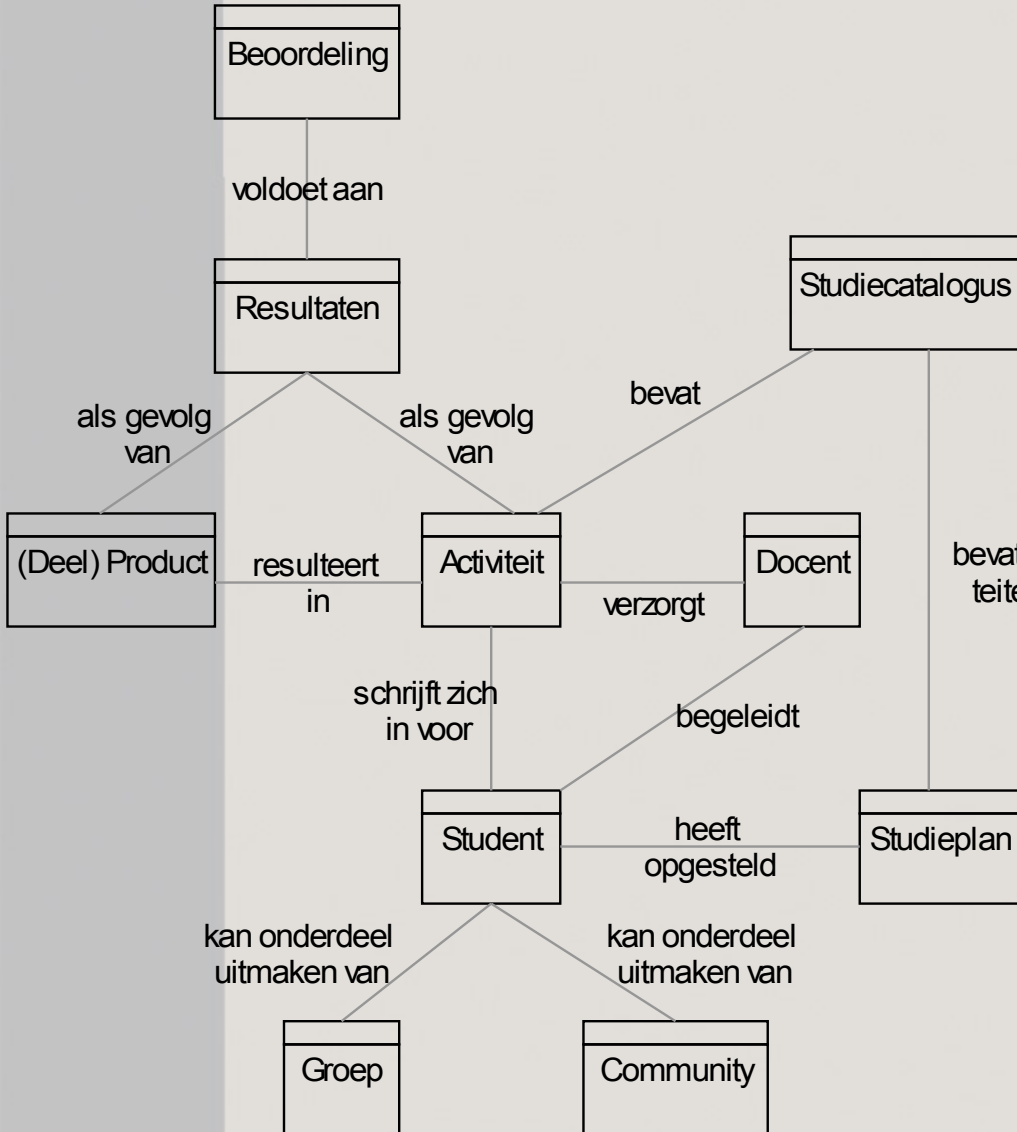
- Student
- Onderwijsondersteuning
- Onderwijsmanagement
- Docent

3TU-student is aangemeld tot studenten aan meerdere activiteiten of meerdere activiteit(en)

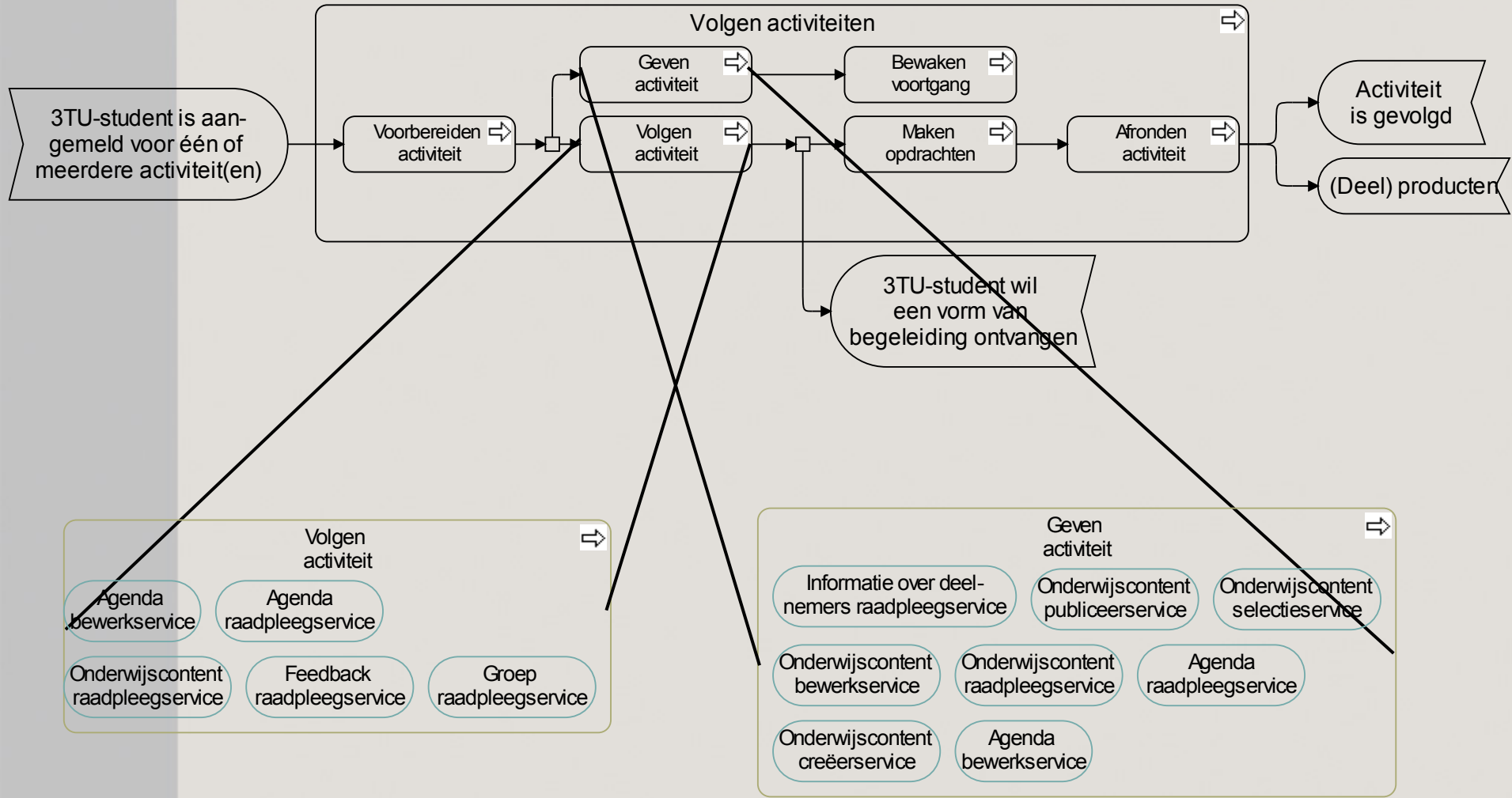


Results: Business Objects

- Business Objects
- CRUD
- Standards



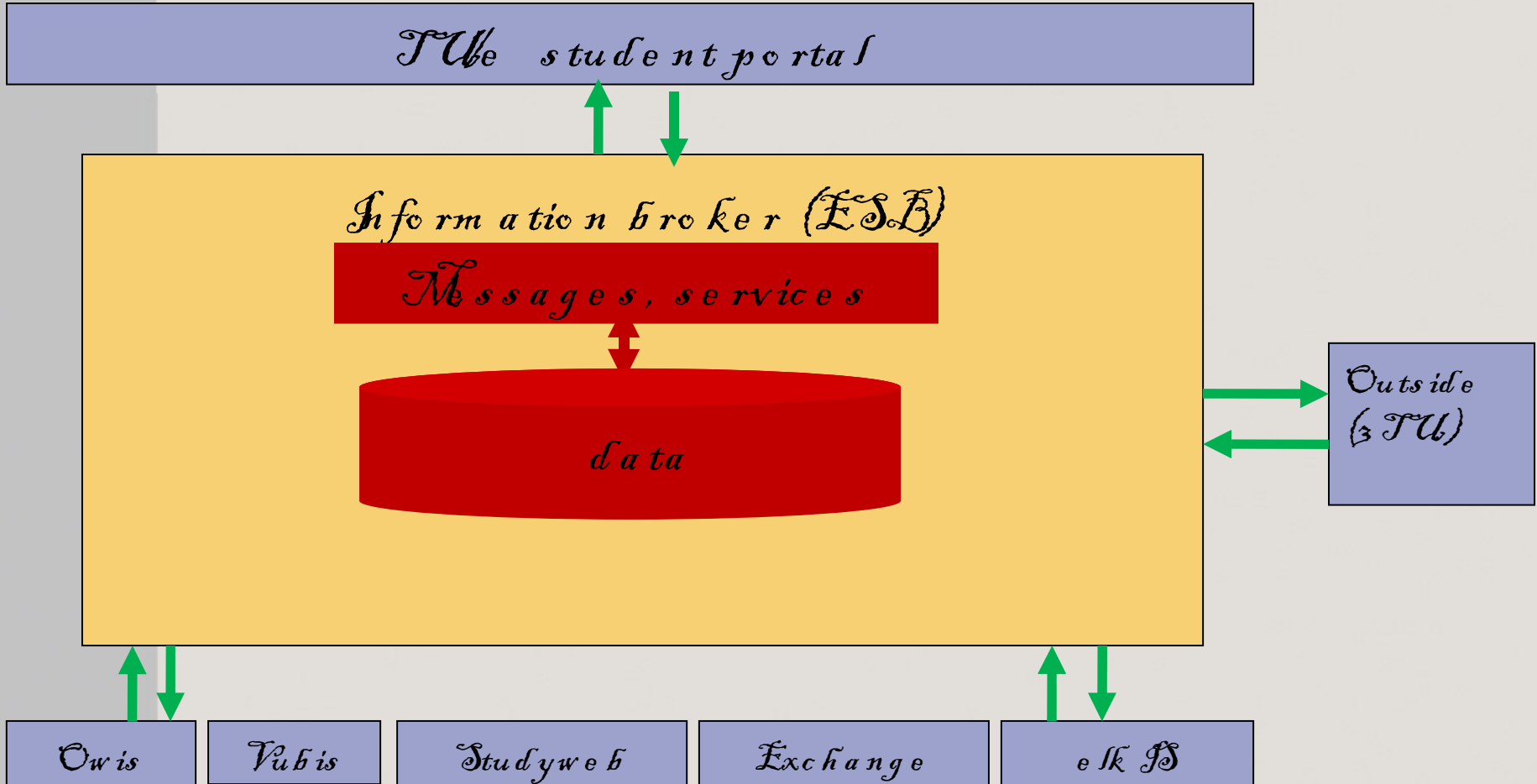
Results: Application Services



Phase II: proof of concept

- Consultation of course catalogue across universities
- Should include ESB's
- Standard for course information: XCRI-CAP
- Need application profiles
- Choice of Communication protocols
- First test: september 2009
- POC fully integrated: march 2010

TU/e has built working VLE



Next steps

- Finish Proof of Concept
- ArchiMate training for internal architects
- Developers learning to develop webservices
- Service departments learning to manage services
- Choice of middleware platform (ESB)
- Roadmap for 3TU. VLE

Lessons learned

- Processes and services can be understood and modelled using ArchiMate
- Model can be used to build a working Learning Environment
- ArchiMate and tool training required to fully benefit from them
- Some standards are available
- SOA increases life-time of legacy
- Performance may be an issue

Challenges

- 3TU. is a collaboration between partners who are also fierce competitors
- Individual branding remains very important
- In IT more enthusiasm than in education: risk
- Clash of the titans: architects versus project managers
- Not much experience with services

More challenges

- No dedicated enterprise architects in 3TU. (yet)
- Ability to enforce process design or standards
- Authority for architects?
- Demarcation line between 3TU. and local infrastructure remains an issue