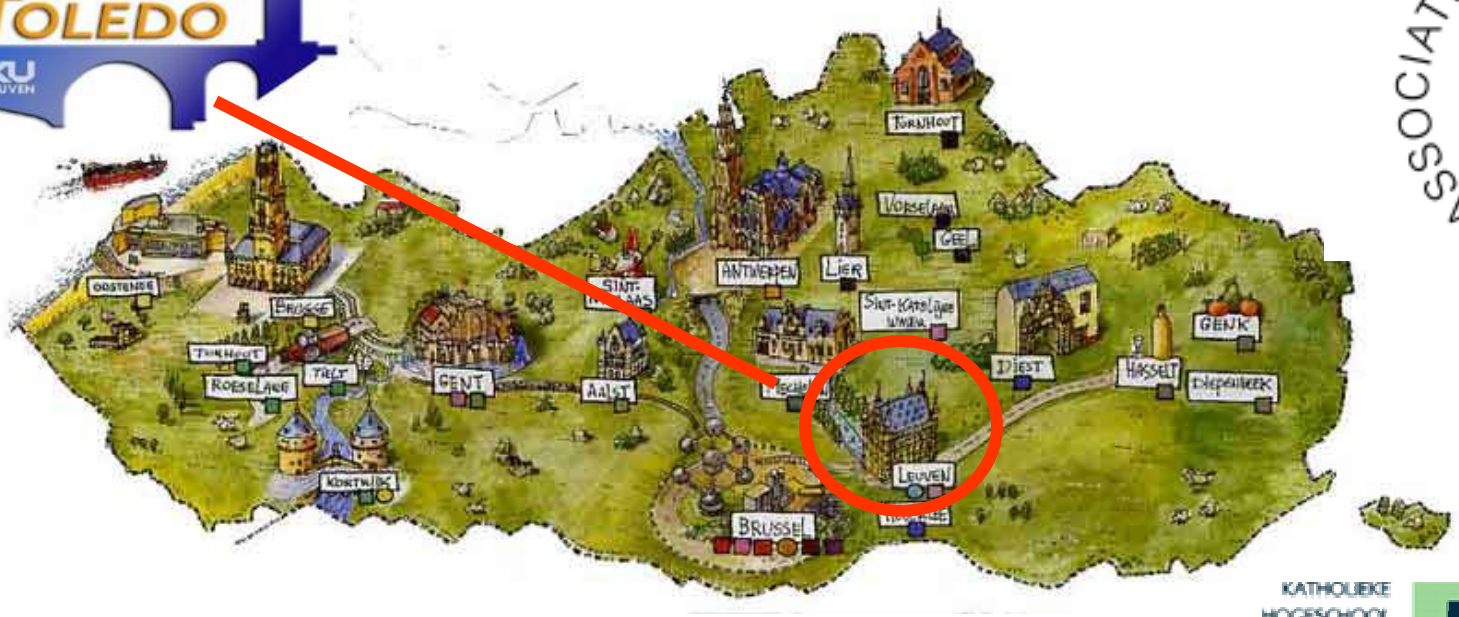
TOLEDO



ASSOCIATIE K.U.LEUVEN

Katholieke Hogeschool Mechelen

KHLEUVEN
KATHOLIEKE HOGESCHOOL LEUVEN

KATHOLIEKE UNIVERSITEIT LEUVEN

KATHOLIEKE HOGESCHOOL KEMPEN

GROEP T
HOGESCHOOL LEUVEN

KATHO
Katholieke Hogeschool Zuid-West-Vlaanderen

HOGESCHOOL VOOR WETENSCHAP & KUNST

EHSAL

KHBO
Katholieke Hogeschool Brugge-Oostende
Associatie K.U.Leuven

Katholieke Hogeschool Limburg

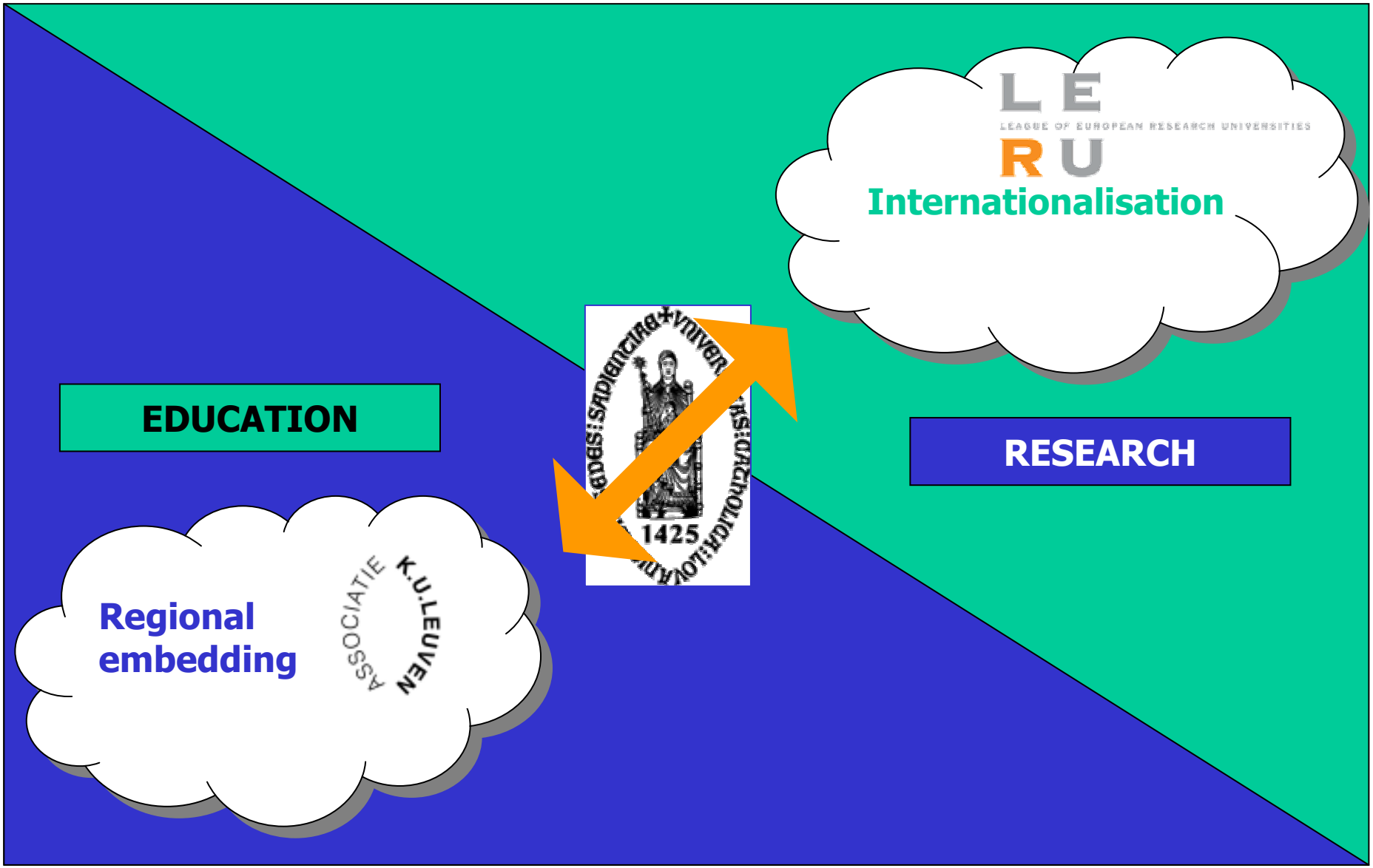
Lessius HOGESCHOOL

SINT-LIEVEN HOGESCHOOL

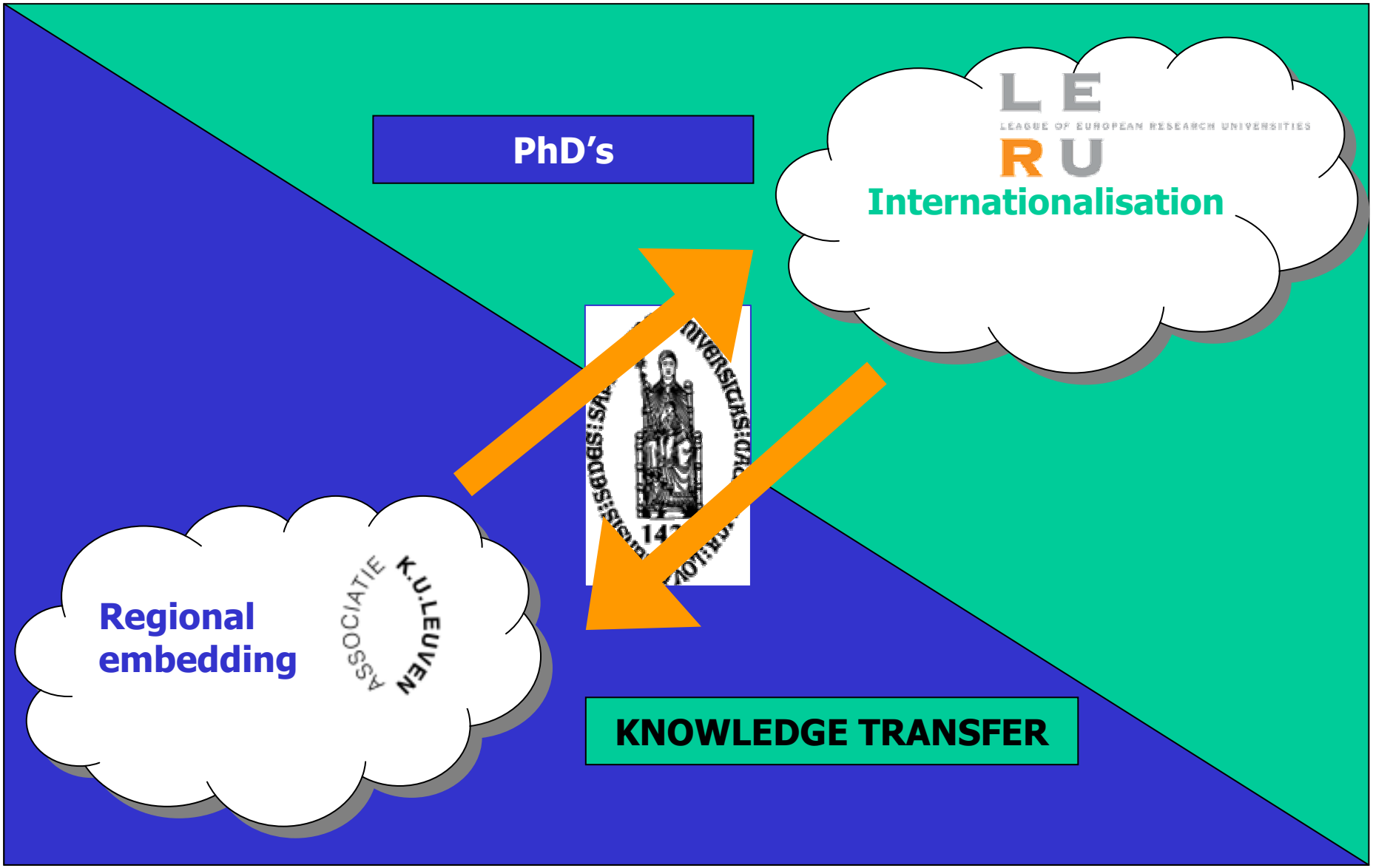
- Adapting to the knowledge economy
- ICT for university core activities
  - Research
  - Scientific education
  - Knowledge embedding & dissemination

- VLE as a flexible education management tool and beyond …
- Integration of VLE's and ERP systems
- Multi-layered, open and modular architecture

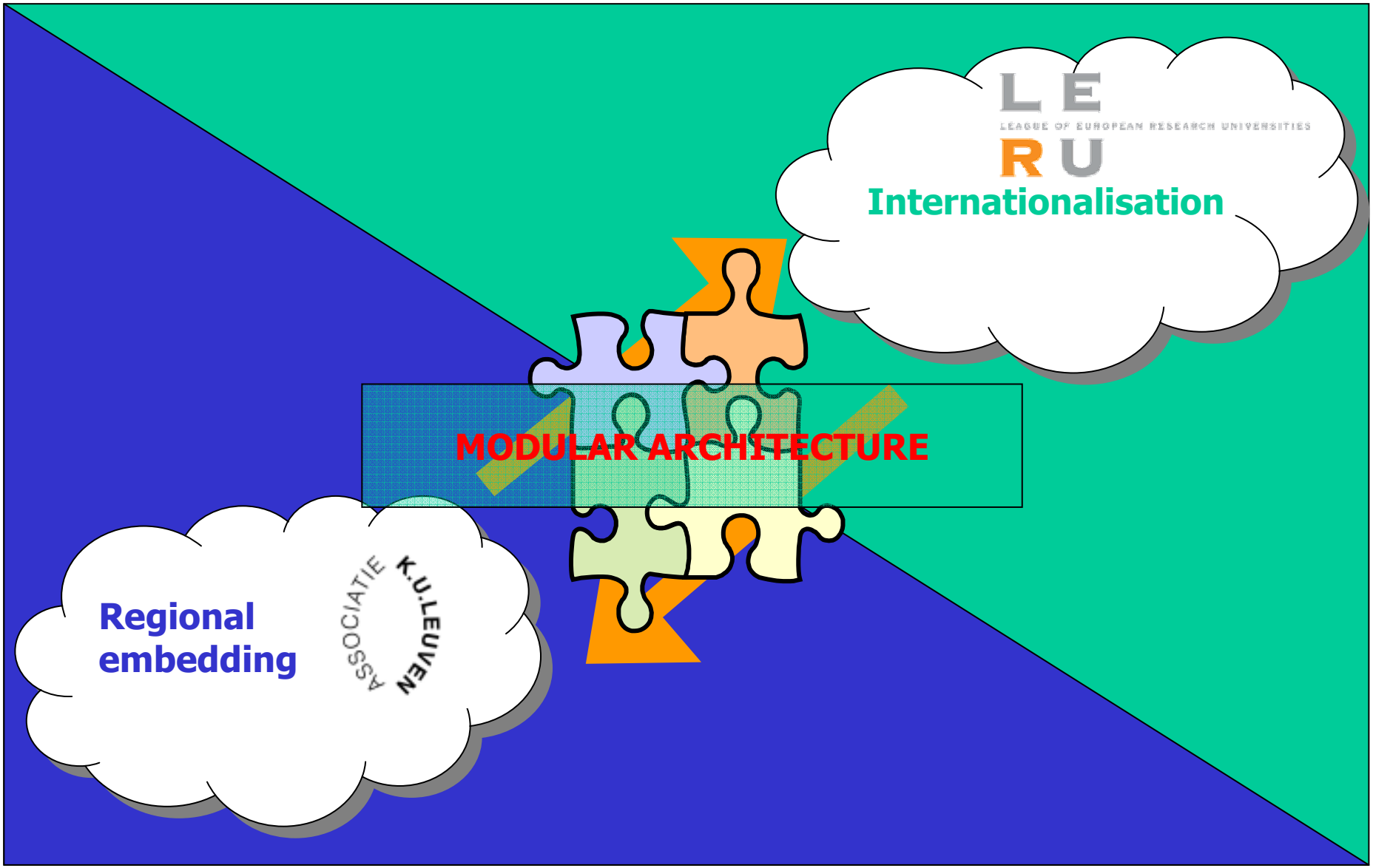
University value chain



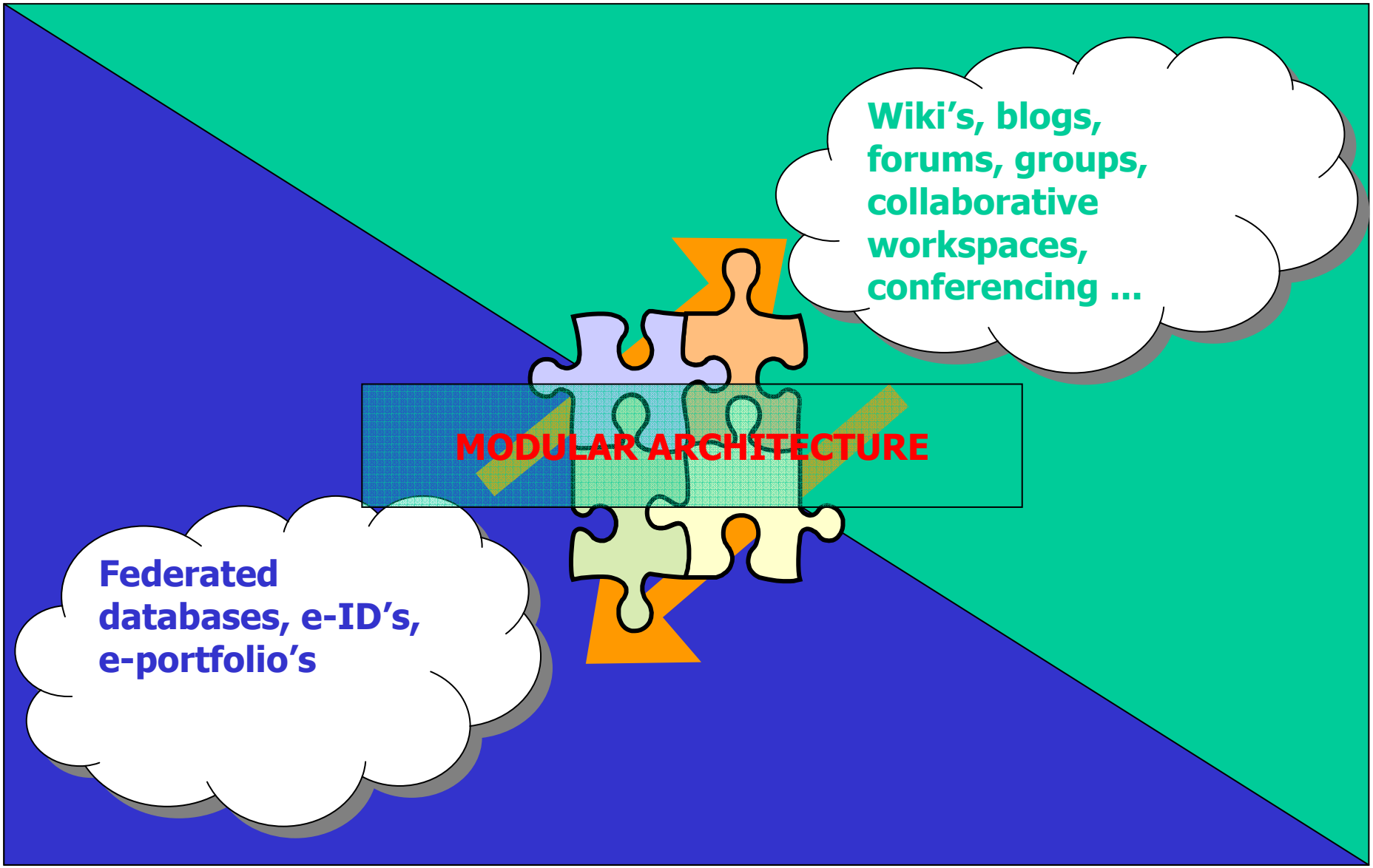
University value chain



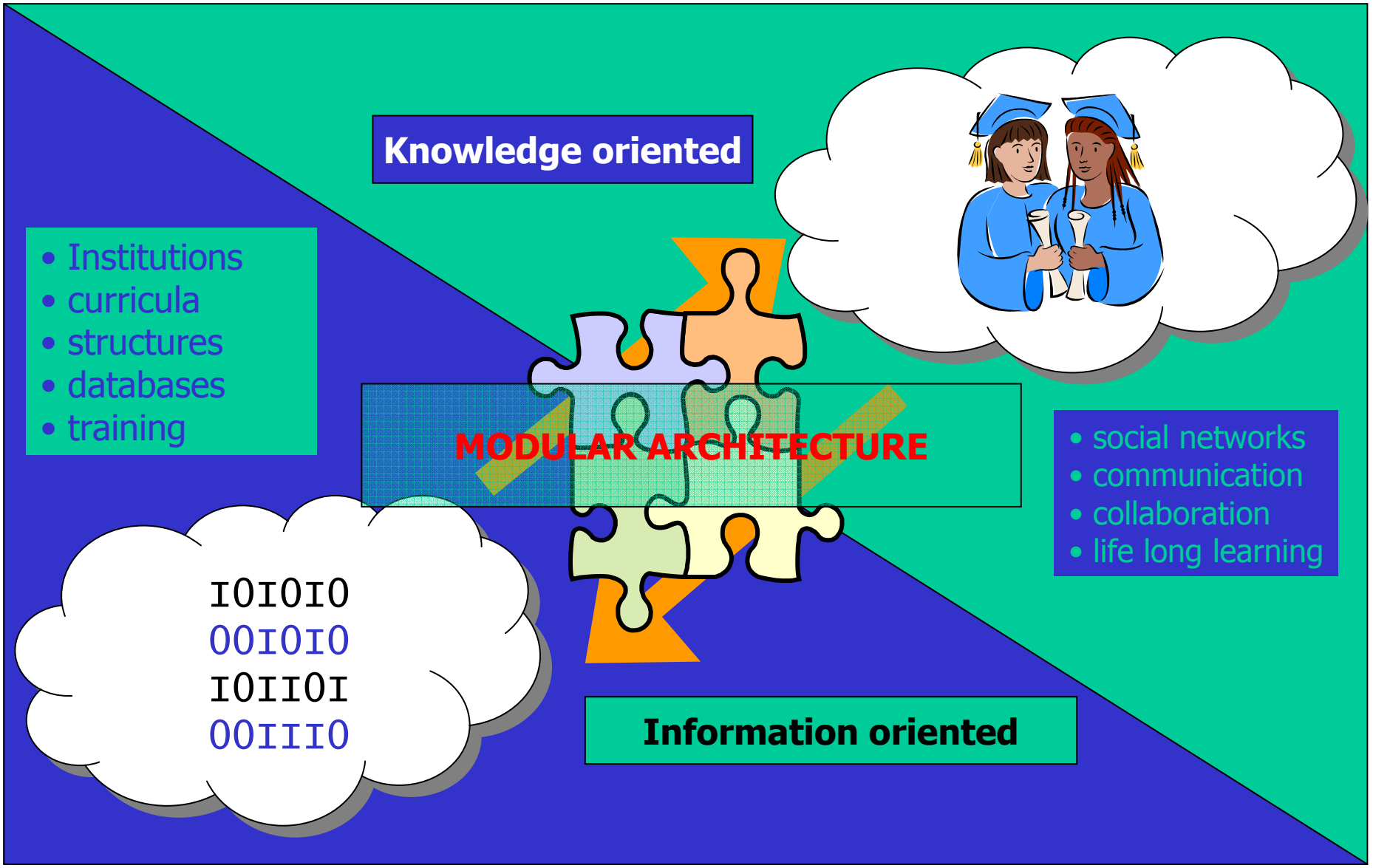
University in the value chain

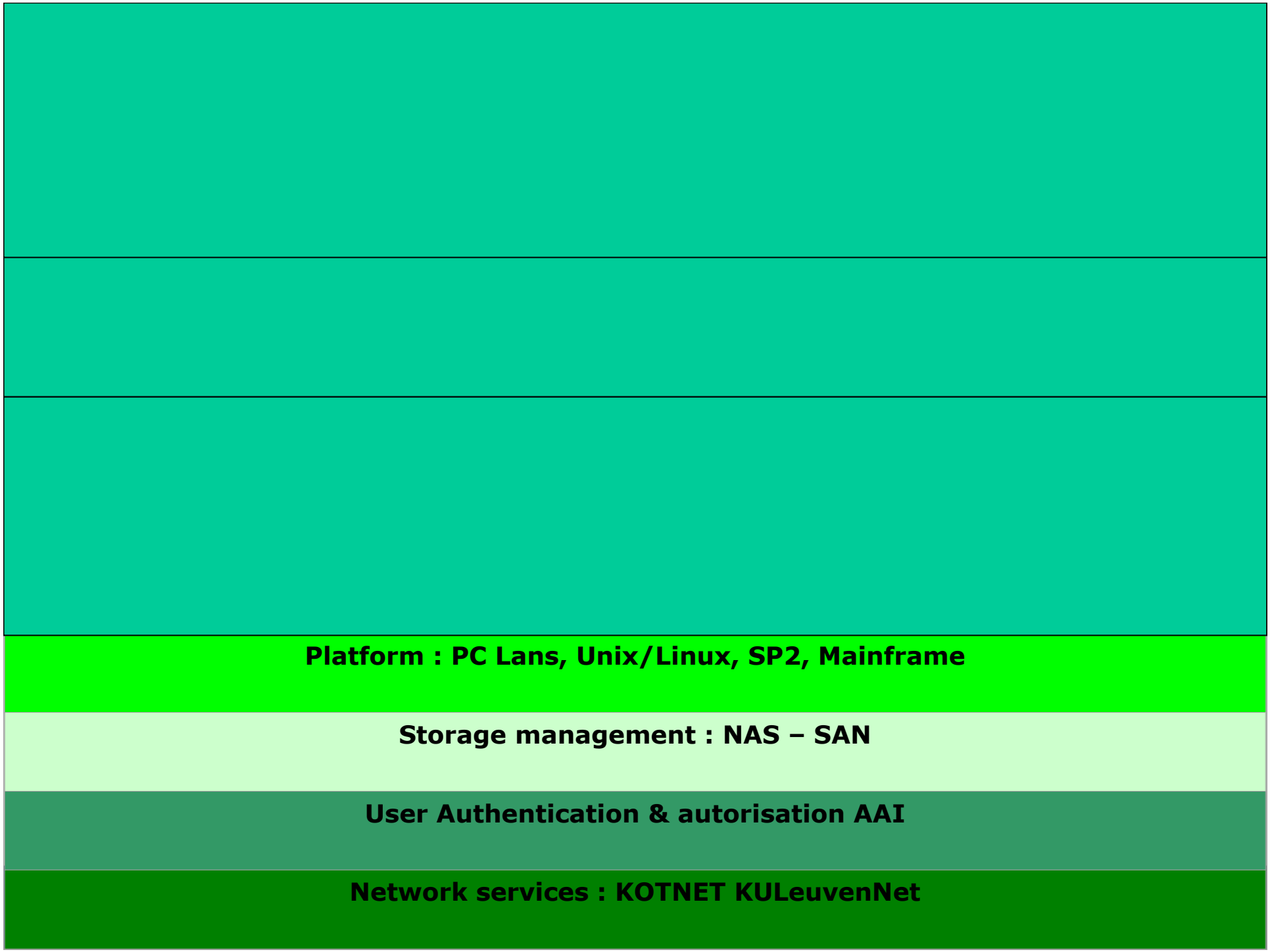


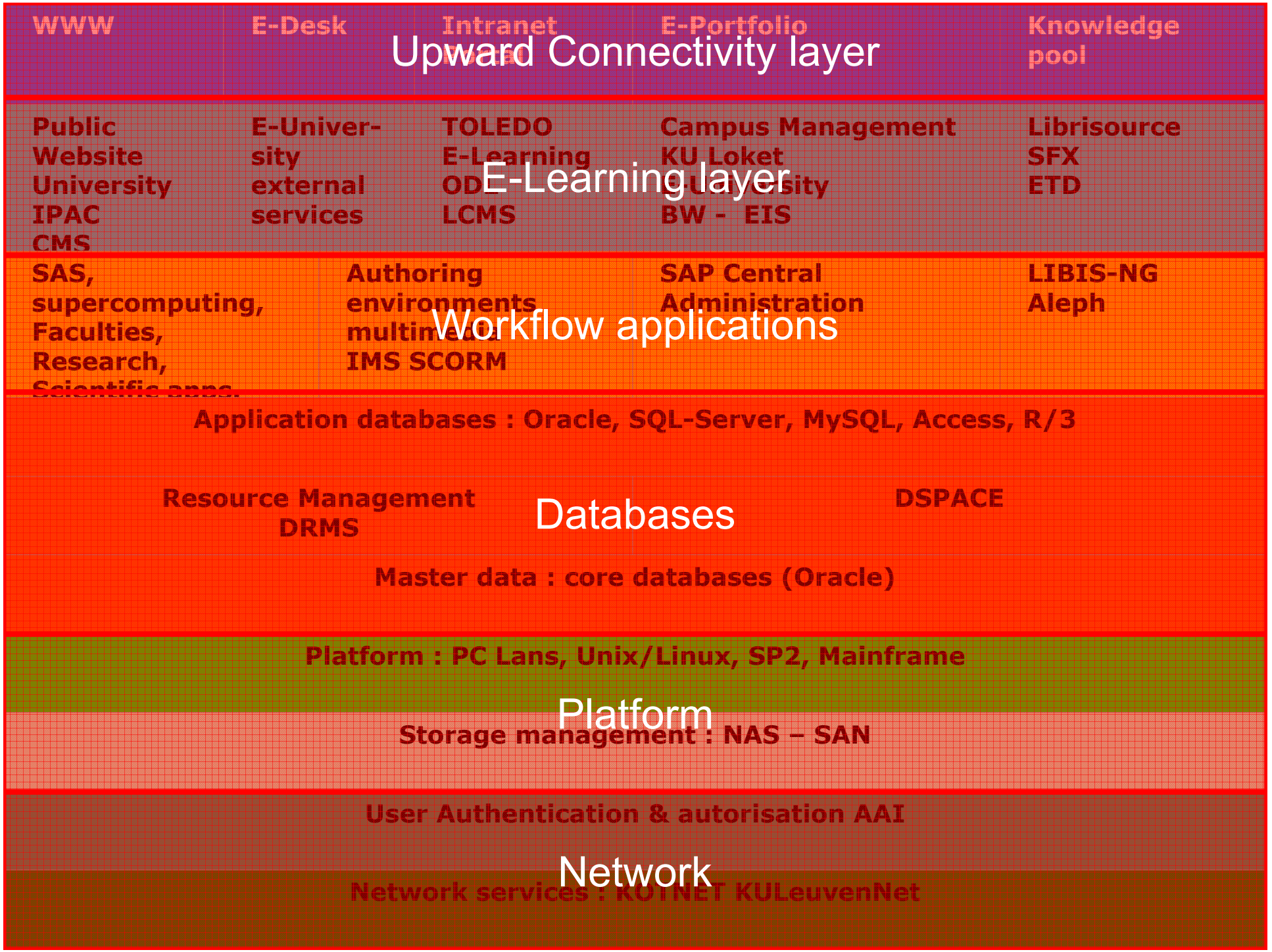
University in the value chain



From information systems to knowledge enablers




Platform : PC Lans, Unix/Linux, SP2, Mainframe
Storage management : NAS – SAN
User Authentication & autorisation AAI
Network services : KOTNET KULeuvenNet


WWW
E-Desk
Intranet
E-Portfolio
Knowledge pool
Upward Connectivity layer
Public Website University IPAC CMS
E-Univer-sity external services
TOLEDO E-Learning
LCMS
Campus Management
KU Loket
BW - EIS
Librisource
SFX
ETD
E-Learning layer
SAS, supercomputing, Faculties, Research,
Authoring environments multimedia IMS SCORM
SAP Central Administration
LIBIS-NG Aleph
Workflow applications
Application databases : Oracle, SQL-Server, MySQL, Access, R/3
Resource Management DRMS
DSPACE
Databases
Master data : core databases (Oracle)
Platform : PC Lans, Unix/Linux, SP2, Mainframe
Platform
Storage management : NAS – SAN
User Authentication & autorisation AAI
Network
Network services : KUNET KULeuvenNet

Educational choices

- Assisted self-study
- Virtual campus: integration of ODL techniques in standard curricular teaching
- Organisation and validation of scientific content throughout association institutions
- Diversity of teaching methods
- Mixed international virtual classes

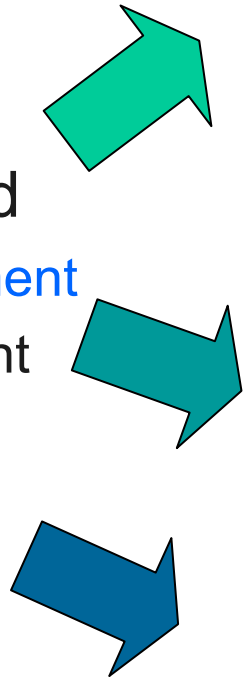
"*Net-centric E-Learning*"

Technological choices

- Industrial partnerships
  - Oracle databases
  - SAP ERP system
  - Campus management SAP
  - Blackboard
  - QuestionMark Perception
- Open source:
  - Ariadne Knowledge Pool
  - Shibbolleth AAI
- Open standards: SCORM, IMS
- Open architecture: Intermediate layer Java/Perl, IMS-compliant XML

Organisational choices: mixed management groups

- ICTS board
  - ICT management
- ICTO advisory board
  - Education Management
  - General management
  - Teaching staff and experts



- TOLEDO
  - DUO/ICTO educational support service
  - LUDIT ICT support
  - Teaching staff
  - Educational support staff
- CDLP
  - Institutions management
  - Toledo representatives
- Internationalisation
  - Think Tank

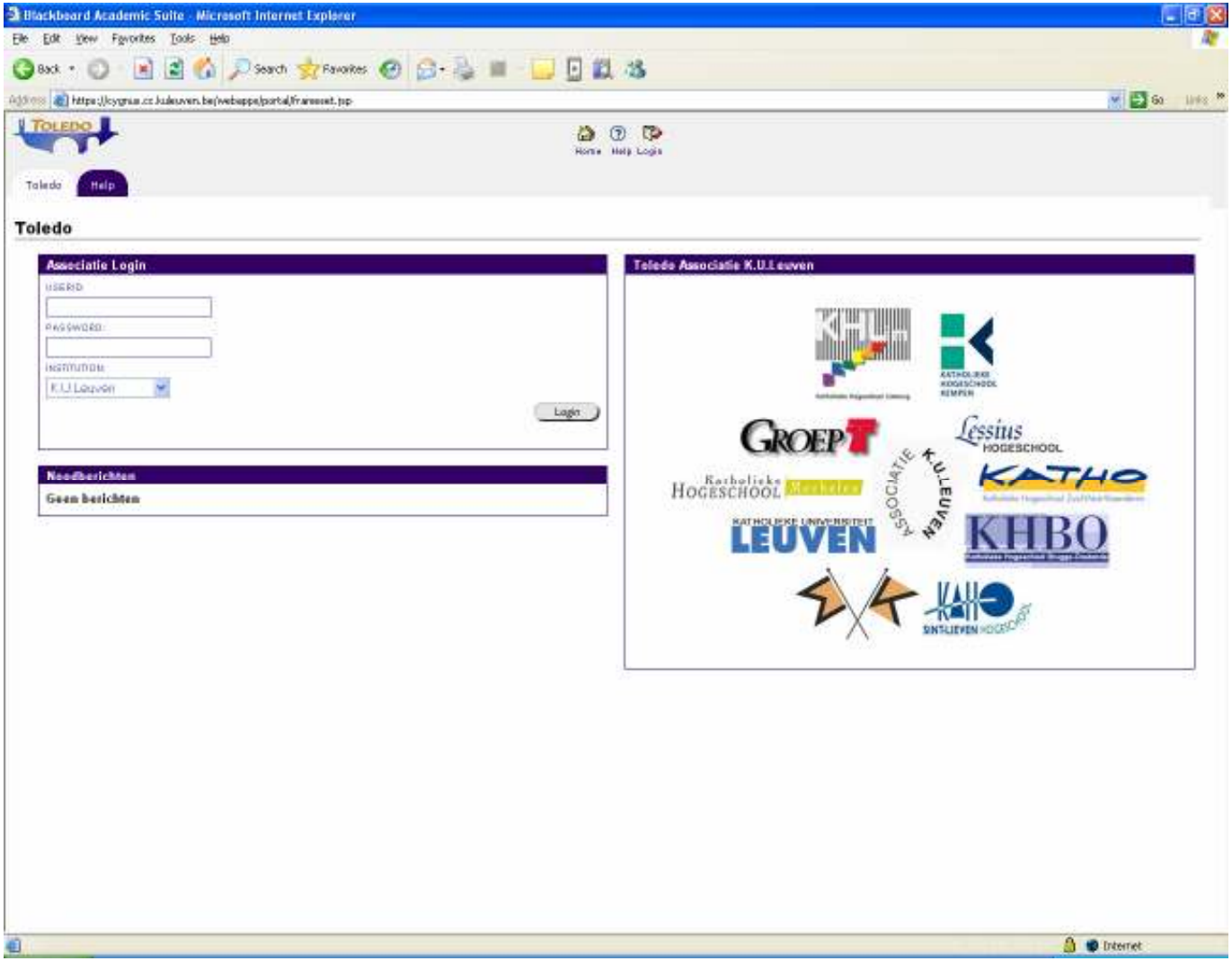
CDLP challenges

- In support for education
  - Different institutes want to offer bridges to other e-learning systems, e.g. QMP, FirstClass,…
  - Different educational needs
    - competence based education
    - guided independent learning
- In system management
  - Different Academic agendas, when do we have time for upgrades?
  - 70,000 students, 20,000 courses, millions of enrolments

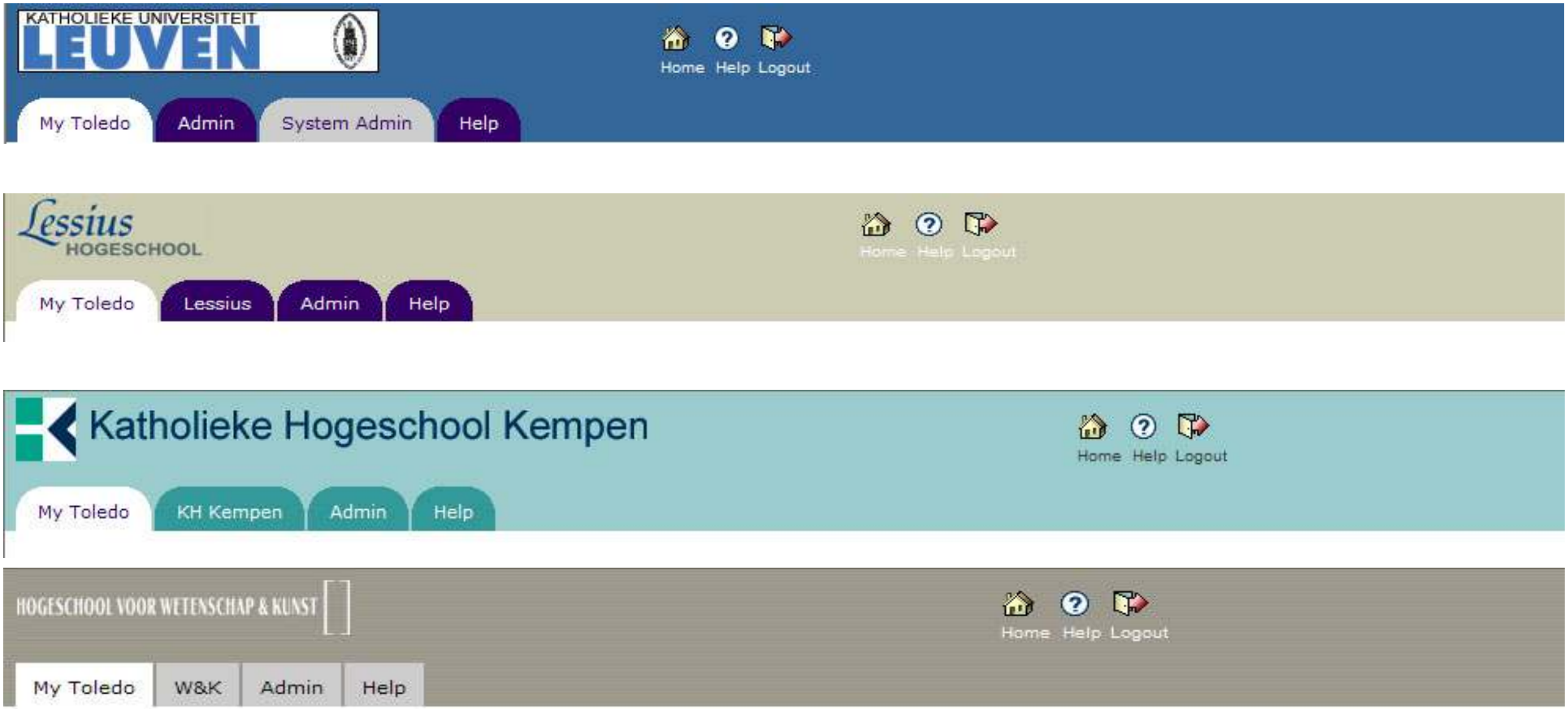
Challenges → Answers

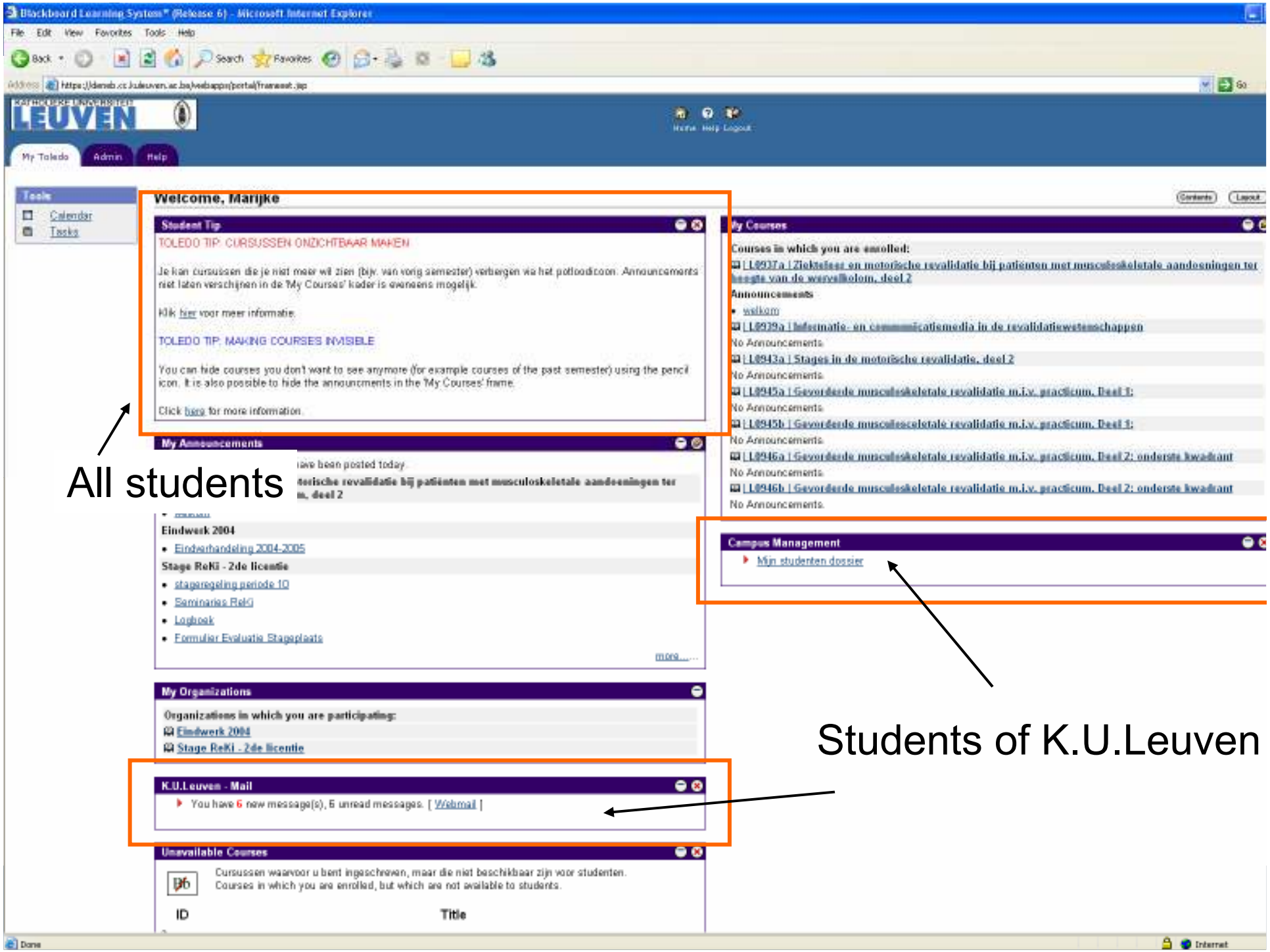
1. 10 institutions; 23 campuses
   - Extensive user of portal functionalities
2. 10 directory servers
   - Adapted logon procedure
3. 10 administrative systems
   - Standardize on IMS for data integration
4. Different disciplines; educational concepts
   - Opening the environment for domain specific solutions
5. + 55,000 users
   - Load balanced system

The educational portal

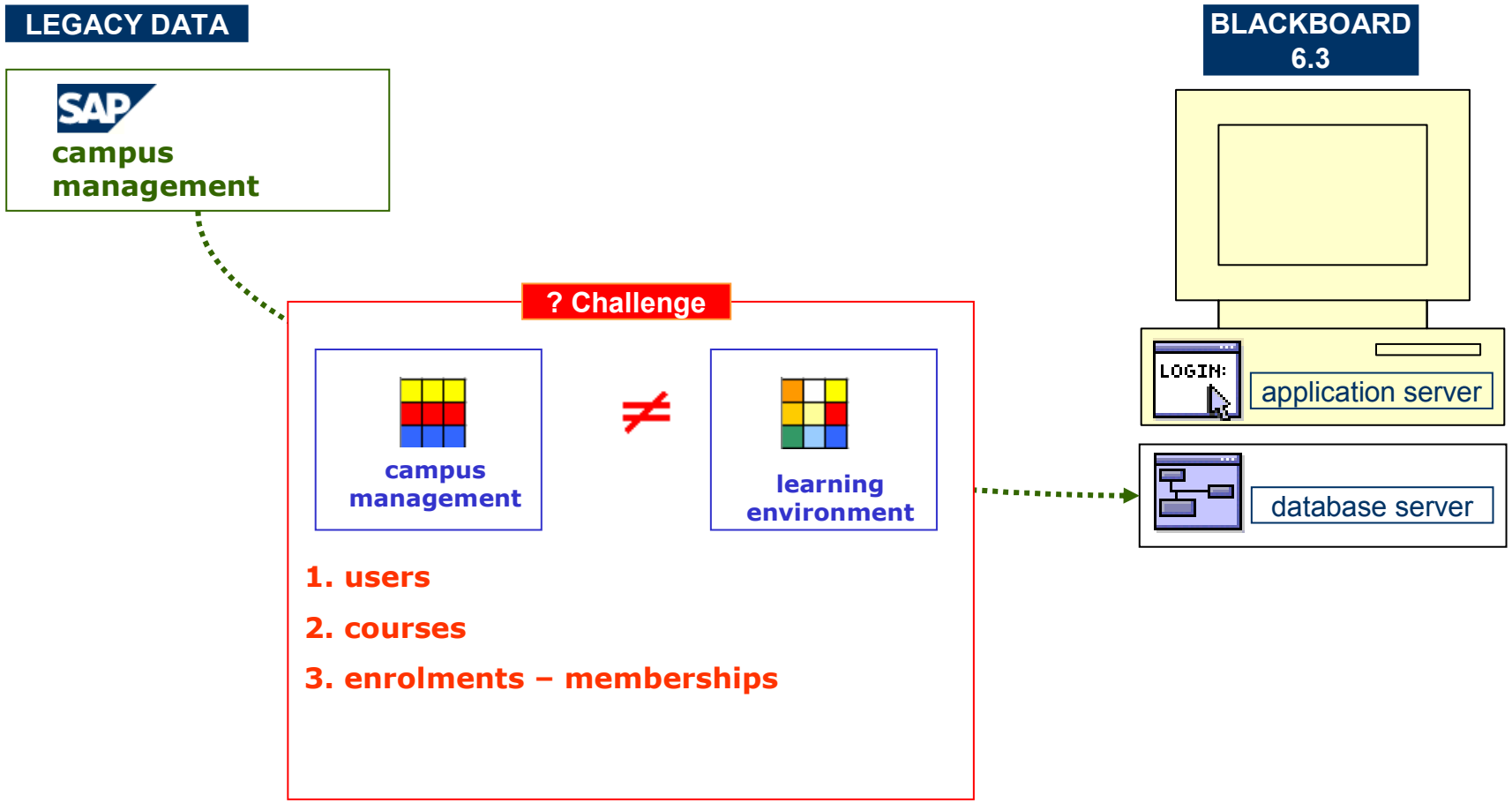


Every CDLP user has personalized educational portal

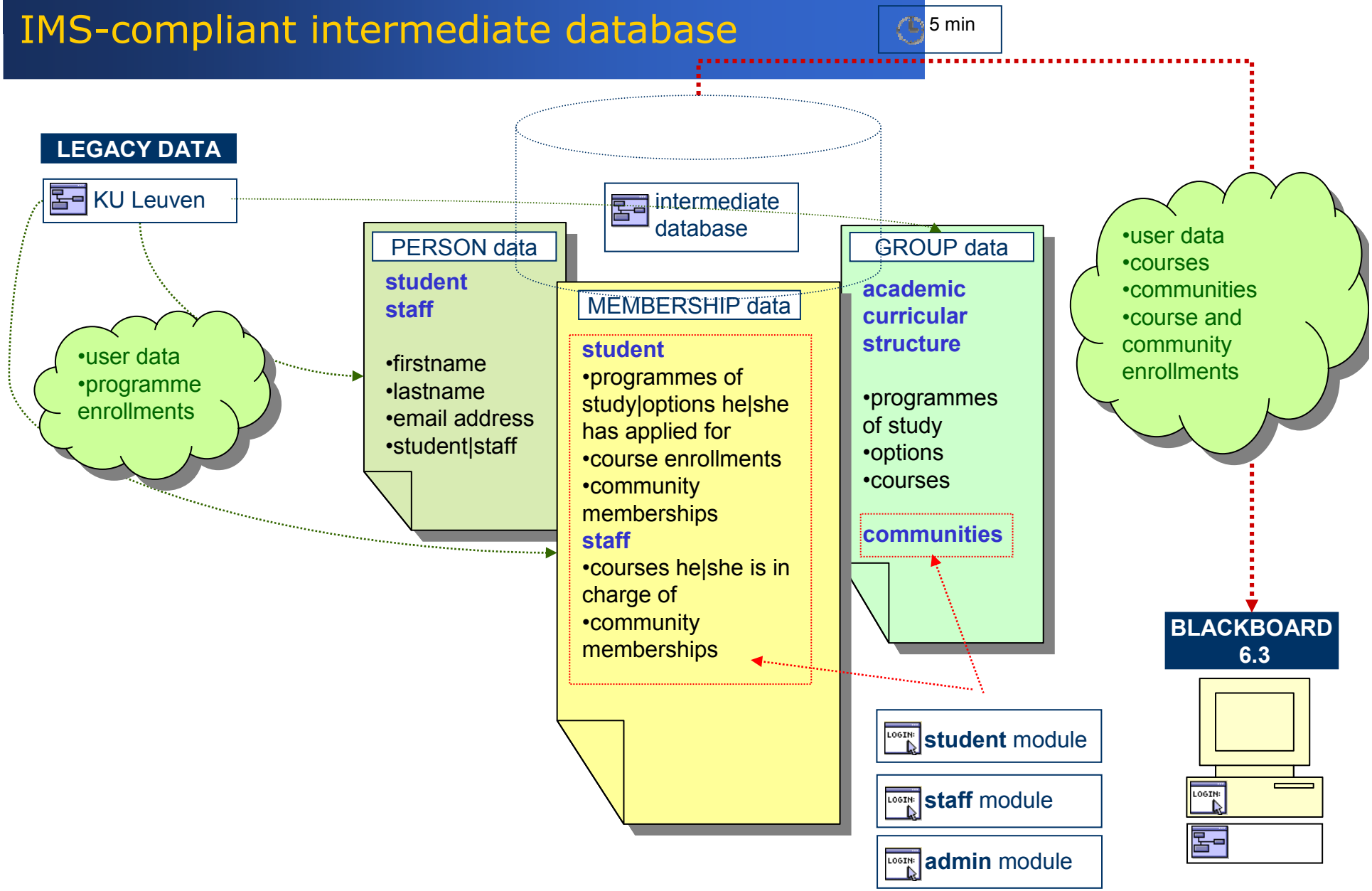



All students
Students of K.U.Leuven

Data **integration**

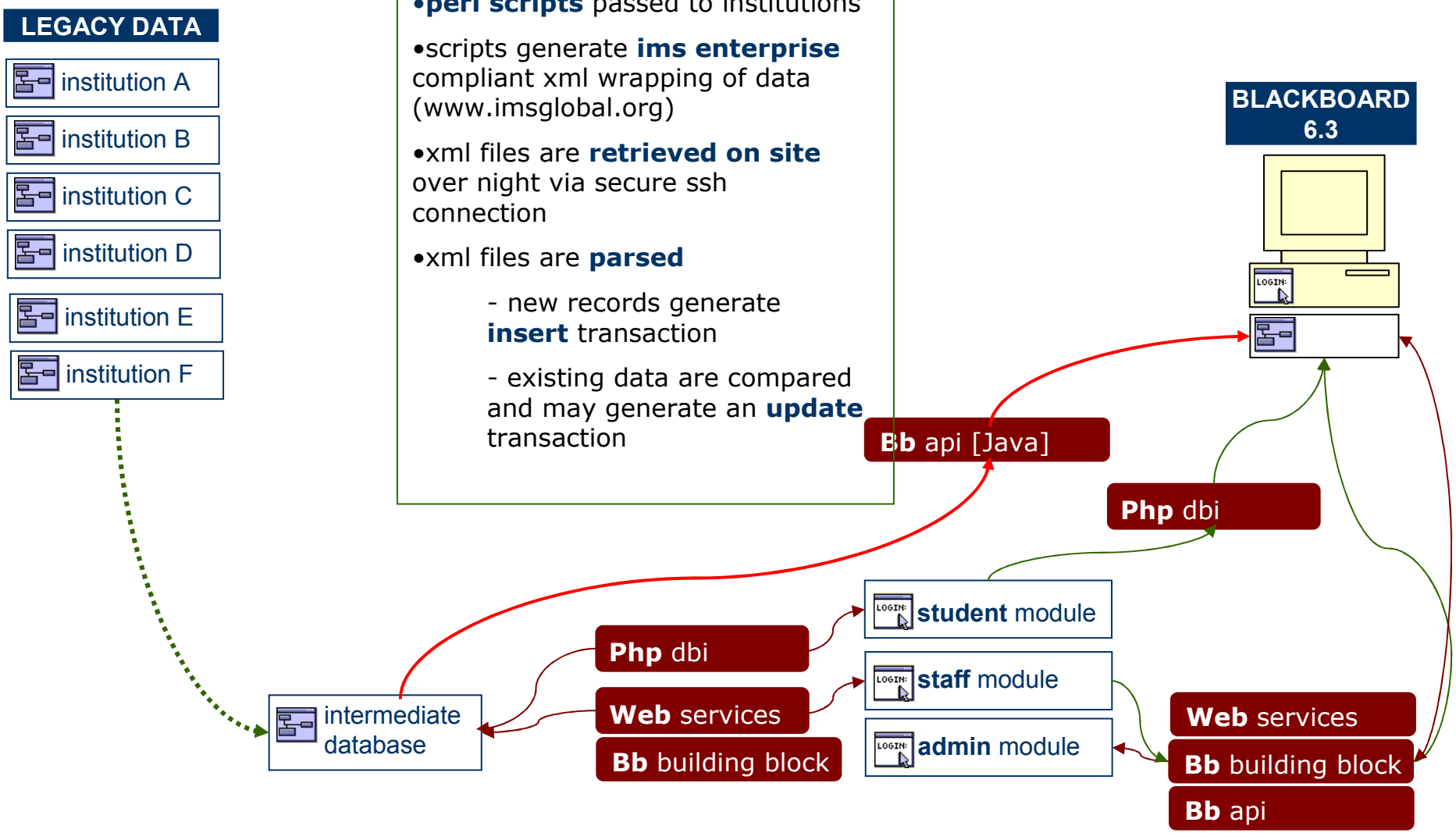


IMS-compliant intermediate database

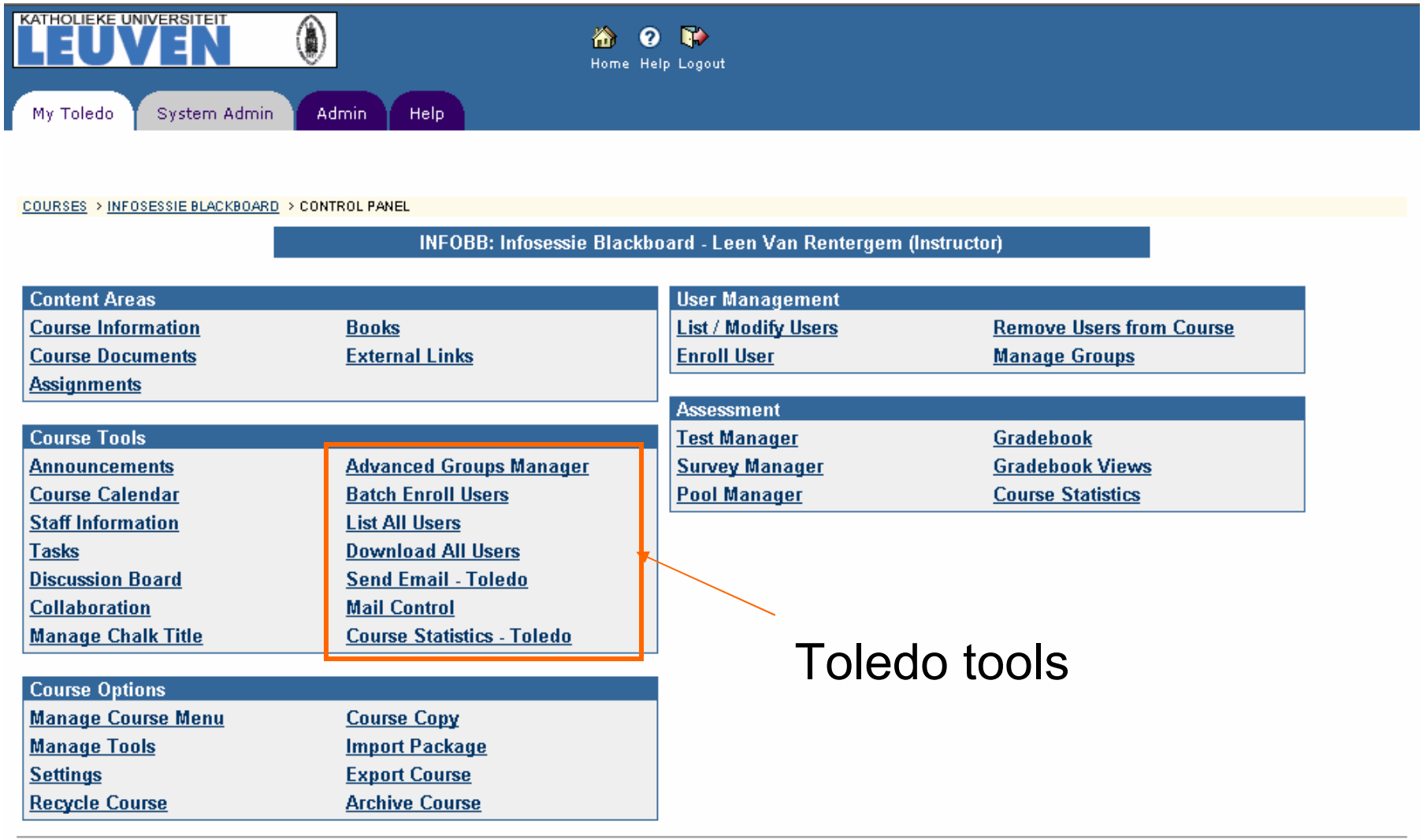


! Approach

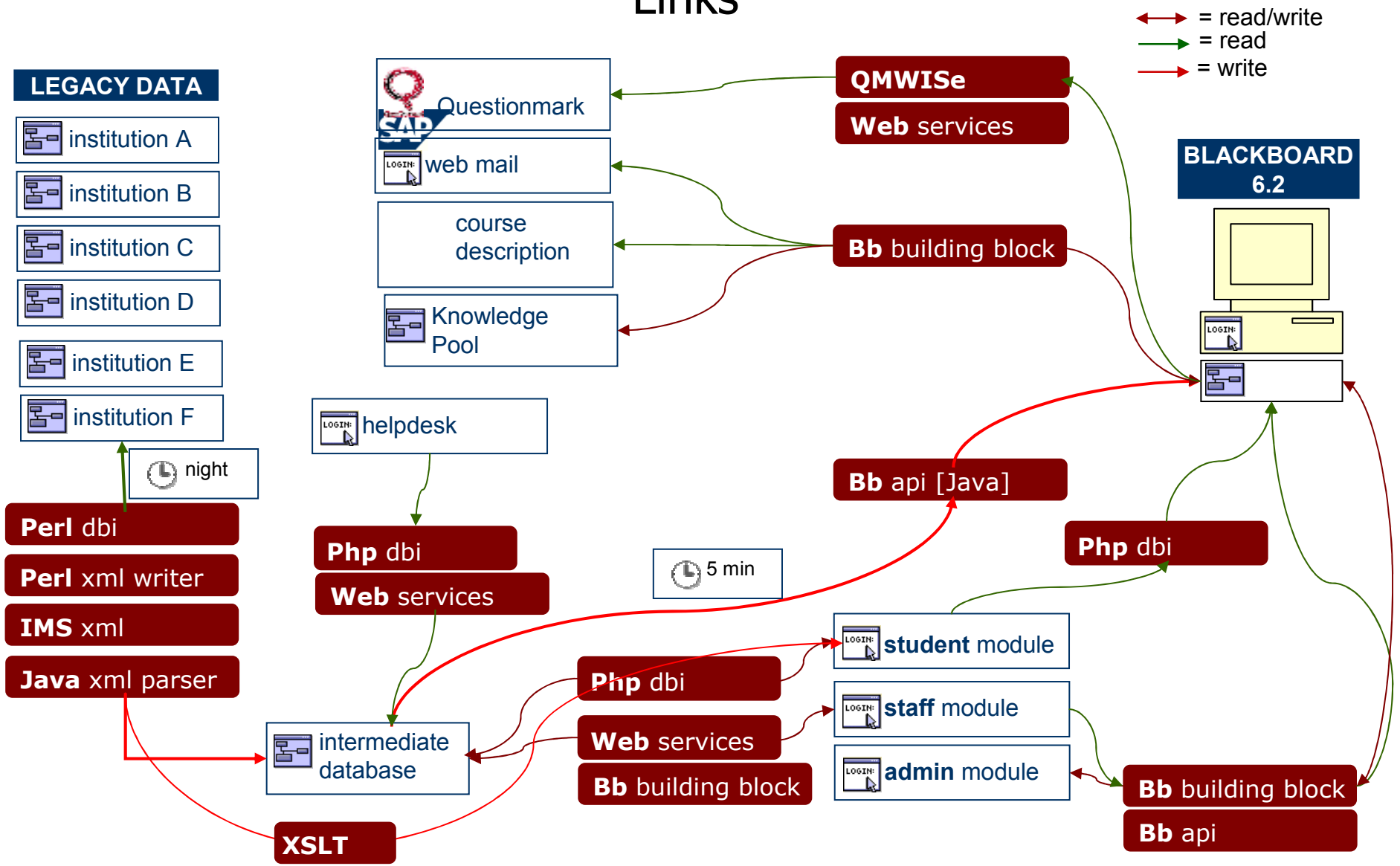
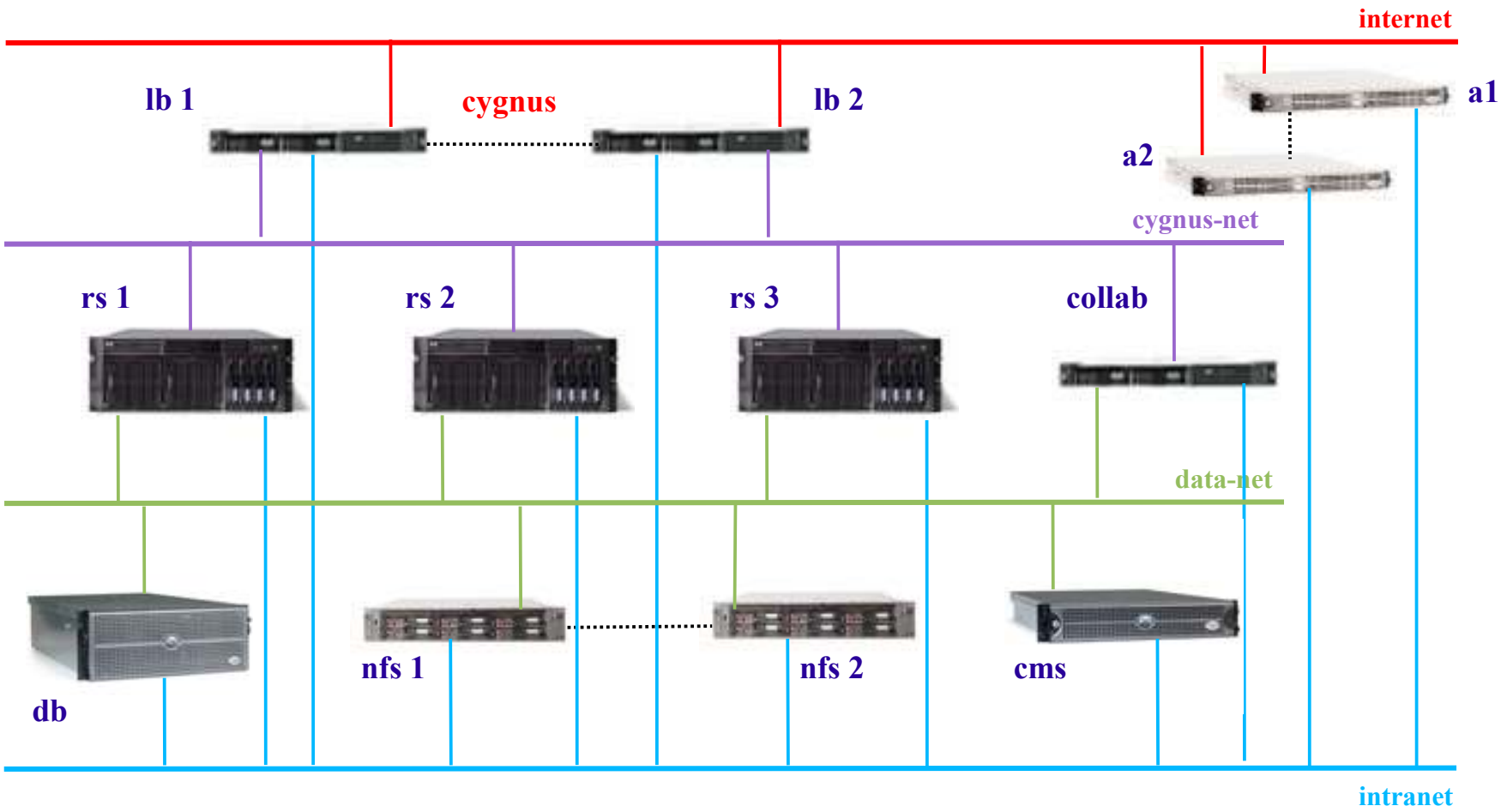
- **perl scripts** passed to institutions
- scripts generate **ims enterprise** compliant xml wrapping of data (www.imsglobal.org)
- xml files are **retrieved on site** over night via secure ssh connection
- xml files are **parsed**
  - new records generate **insert** transaction
  - existing data are compared and may generate an **update** transaction



Extra tools and links



Links


= read/write
= read
= write
LEGACY DATA
institution A
institution B
institution C
institution D
institution E
institution F
night
Perl dbi
Perl xml writer
IMS xml
Java xml parser
XSLT
Questionmark
web mail
course description
Knowledge Pool
helpdesk
Php dbi
Web services
intermediate database
5 min
QMWISe
Web services
Bb building block
Bb api [Java]
Php dbi
Web services
Bb building block
BLACKBOARD 6.2
Php dbi
student module
staff module
admin module
Bb building block
Bb api

Toledo: blackboard production network