

Centre for Digital Systems
Competence Centre eLearning / Multimedia

Manufacturing e-Learning applications

Dr. N. Apostolopoulos

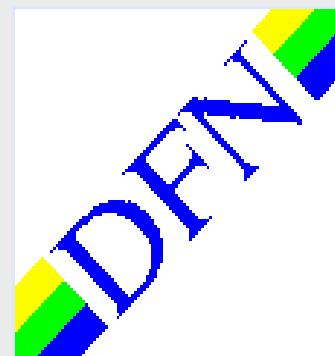
Dr. A. Geukes, Dr. M. Juhnke

Dr. H. Hoffmann, N. Razi

- FU Competence Center e-Learning
- Strategic Planning and deployment
- Initiation and evaluation of key projects
- Financing of e-Learning activities
- Research Projects
- Cooperation issues
- Authoring Services
- Media Production

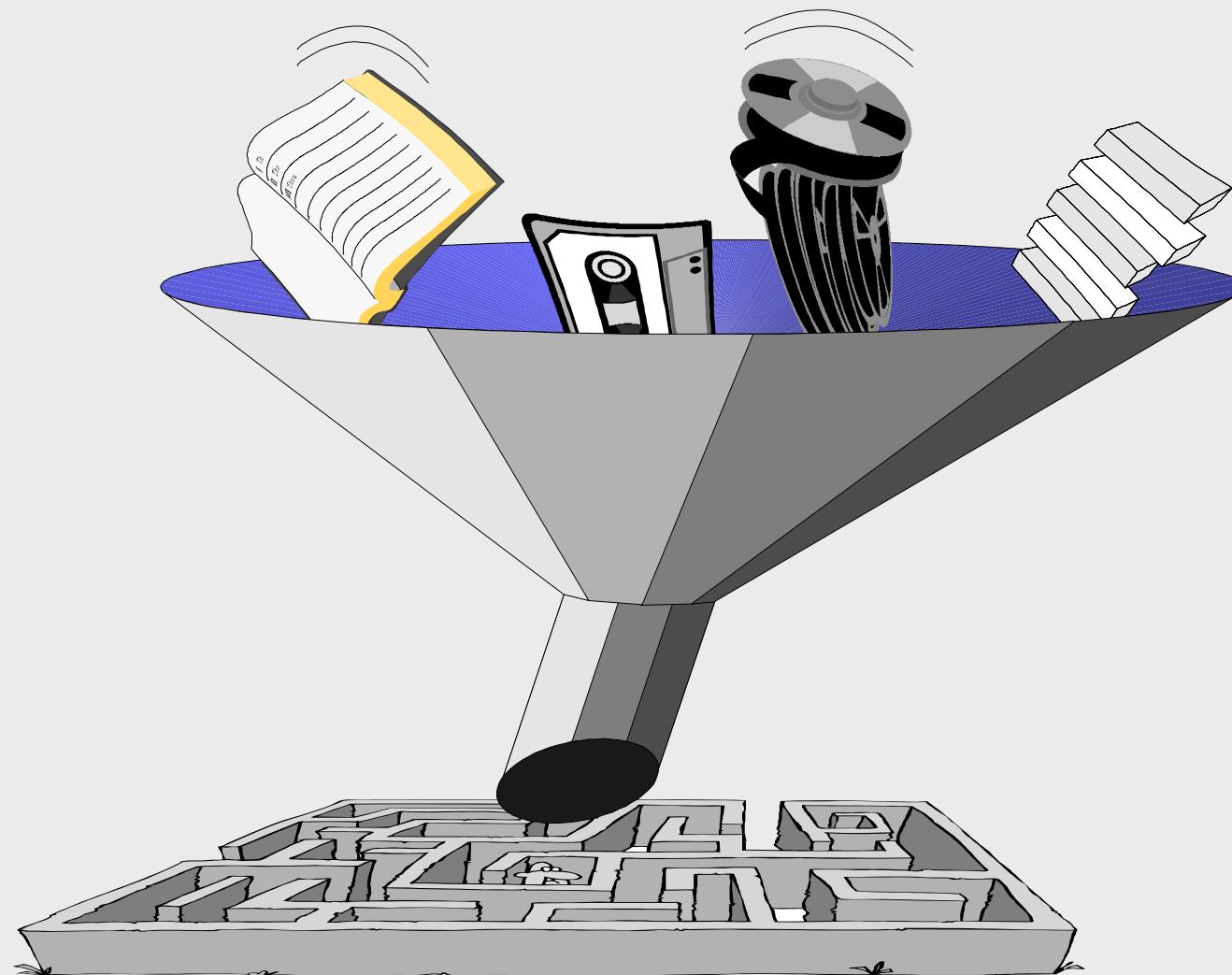


Federal Dept. for Education and Research

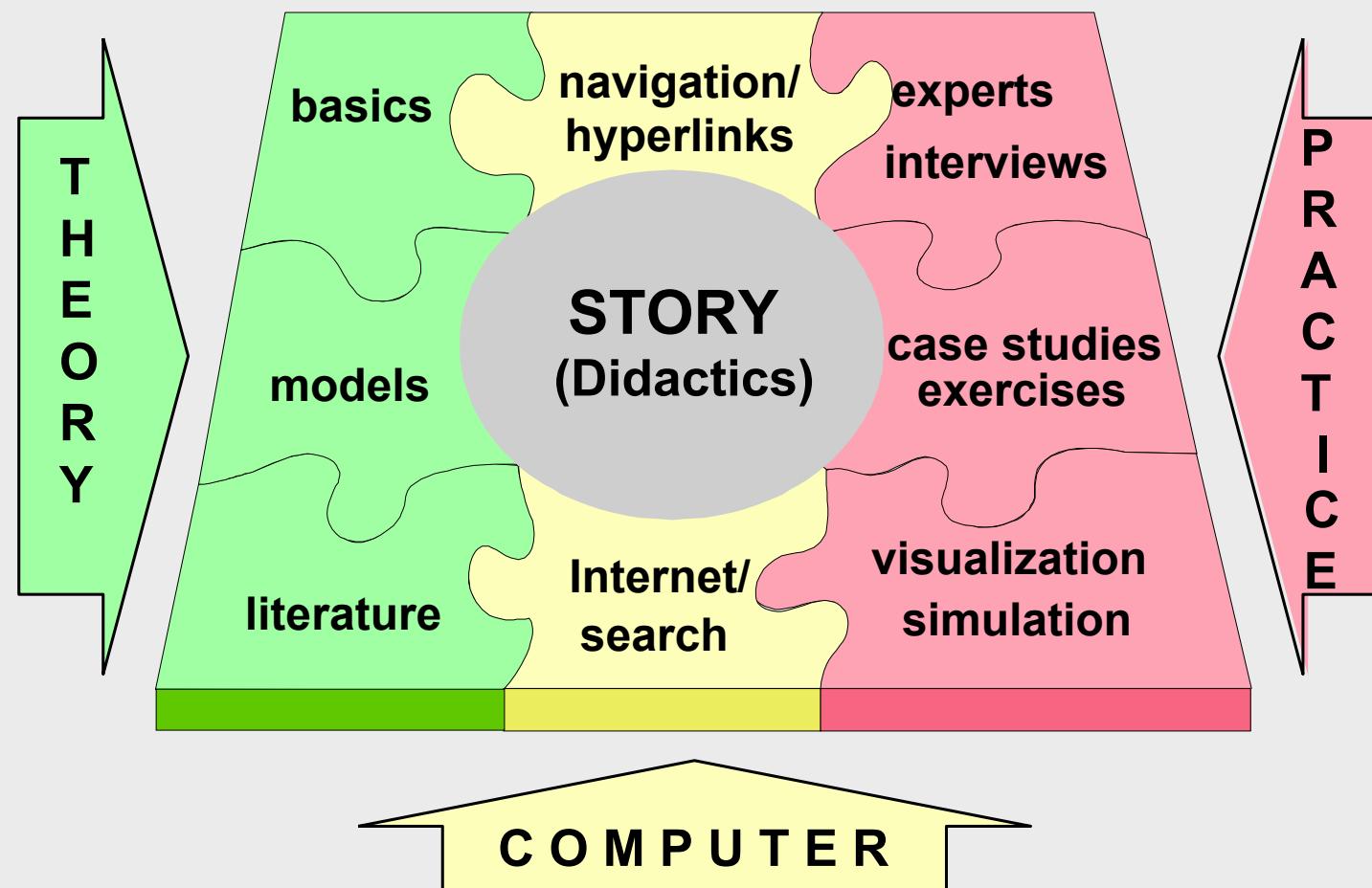


German Research Network

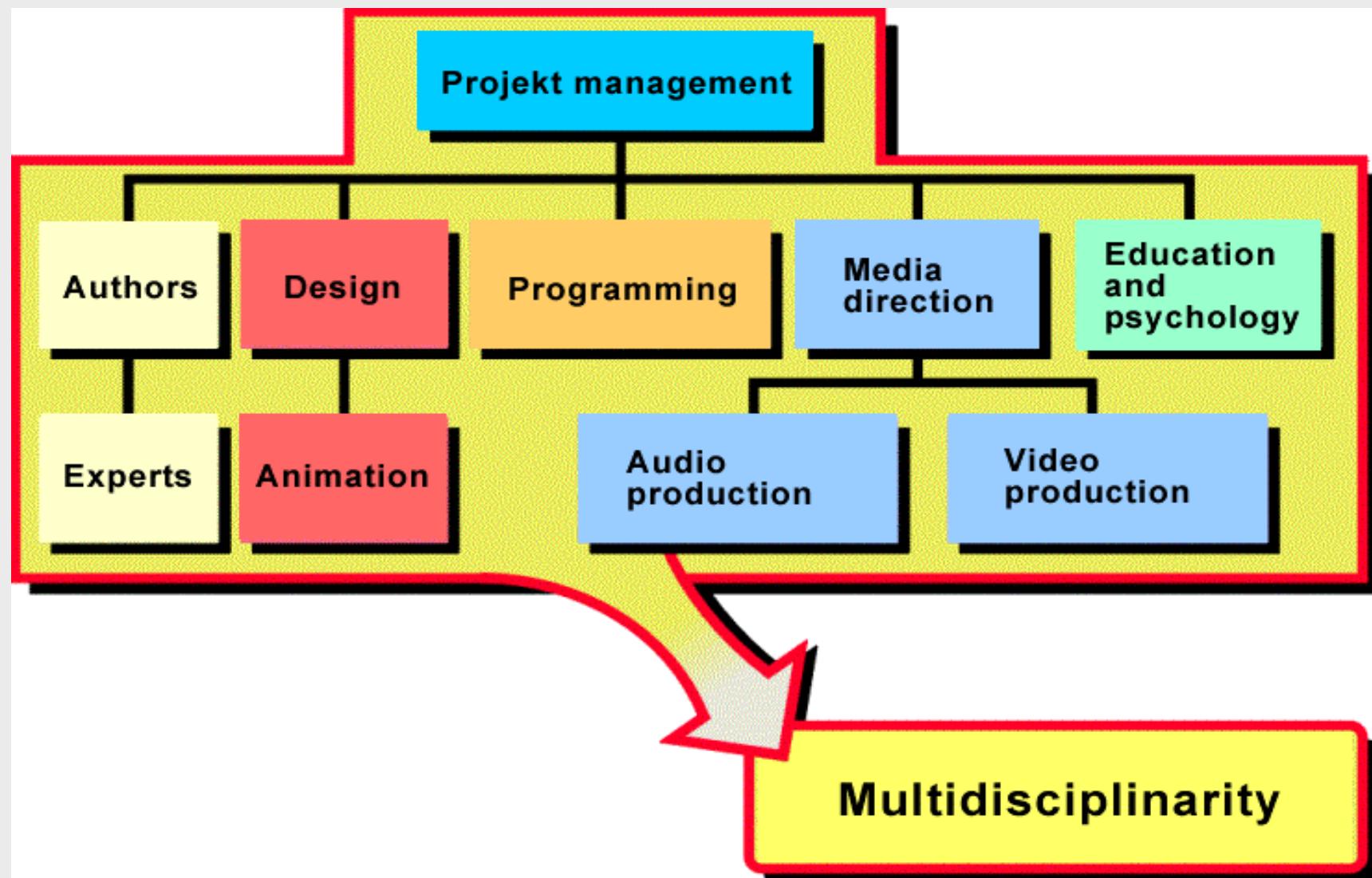
- Key statements
- The first steps
 - Basic Design Issues
 - First Generation Projects
- New Challenges
 - Economy of scale
 - Mass Production
 - International Standards
 - New Projects
- Conclusions

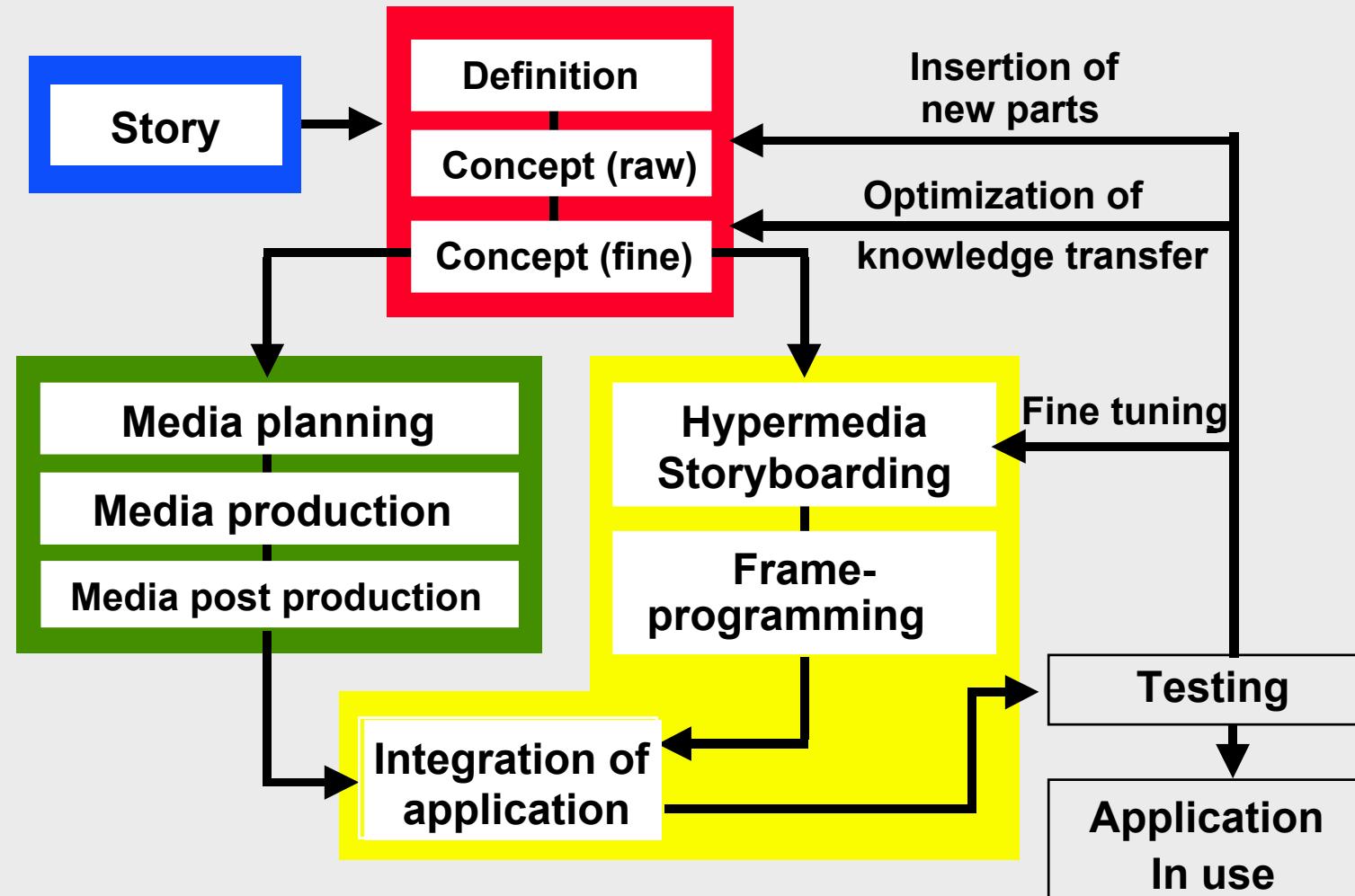


- Attractive digital learning material increases students' motivation and reduces the weakness of the computer
 - Problem based learning (constructivism)
 - Combination of theory, practice and computer-aided tools (animation, simulation, hyperlinks)
 - Enhanced visualization of abstract subjects
 - Active and versatile interaction (virtual worlds)
 - Multiple navigational assistance
 - Creation of 'aha'-effects
- "CREATE HUMAN APPLICATIONS "



- The Development Team
- The Authoring Process
- Mastering Multimedia Complexity
- Integration in Teaching Environment
- Student Support
- Material Update
- Exams and Credits
- International Competition



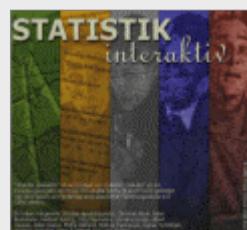




Betriebswirtschaftslehre-Marketing: ODI
award: *digita* 1997

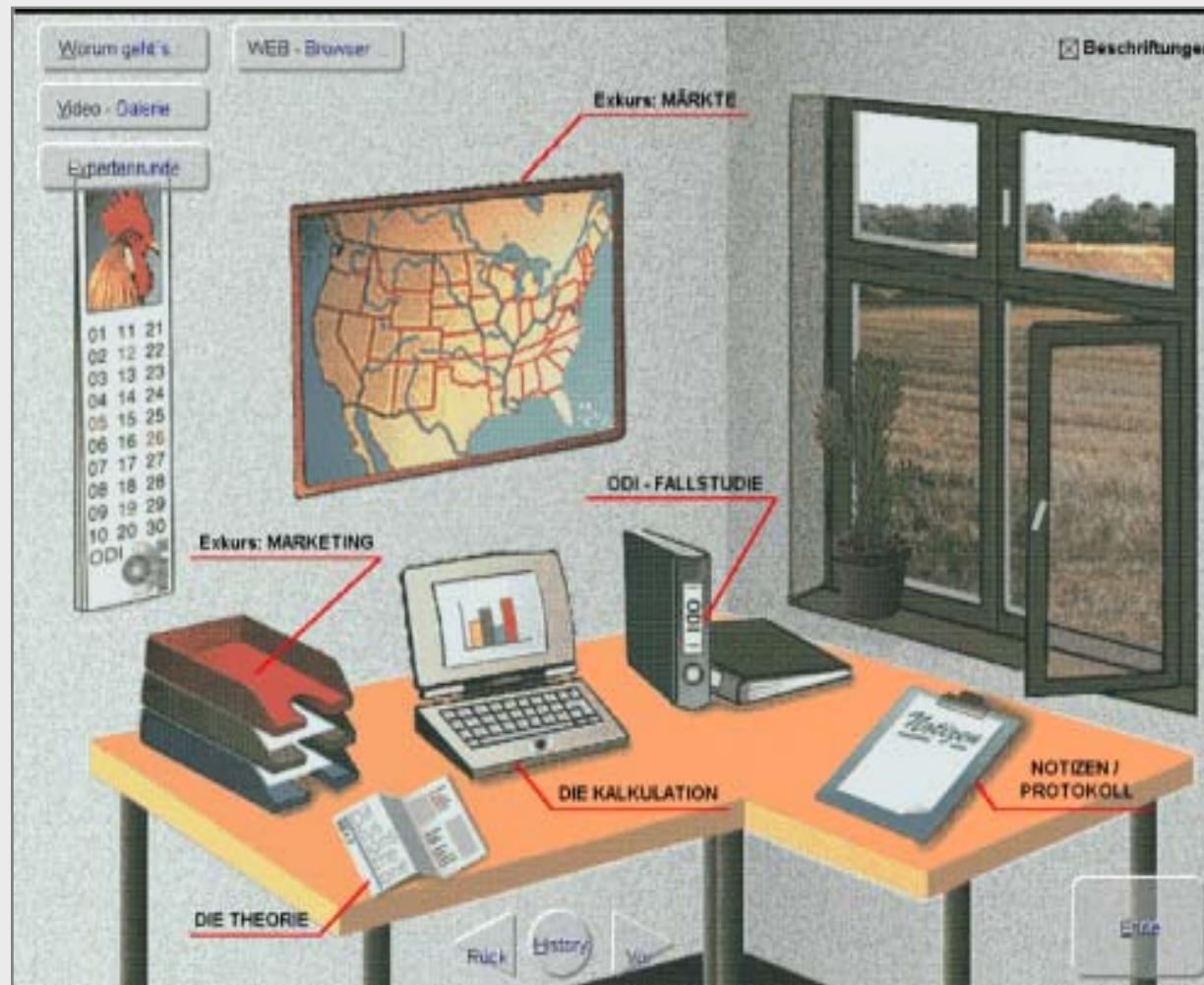


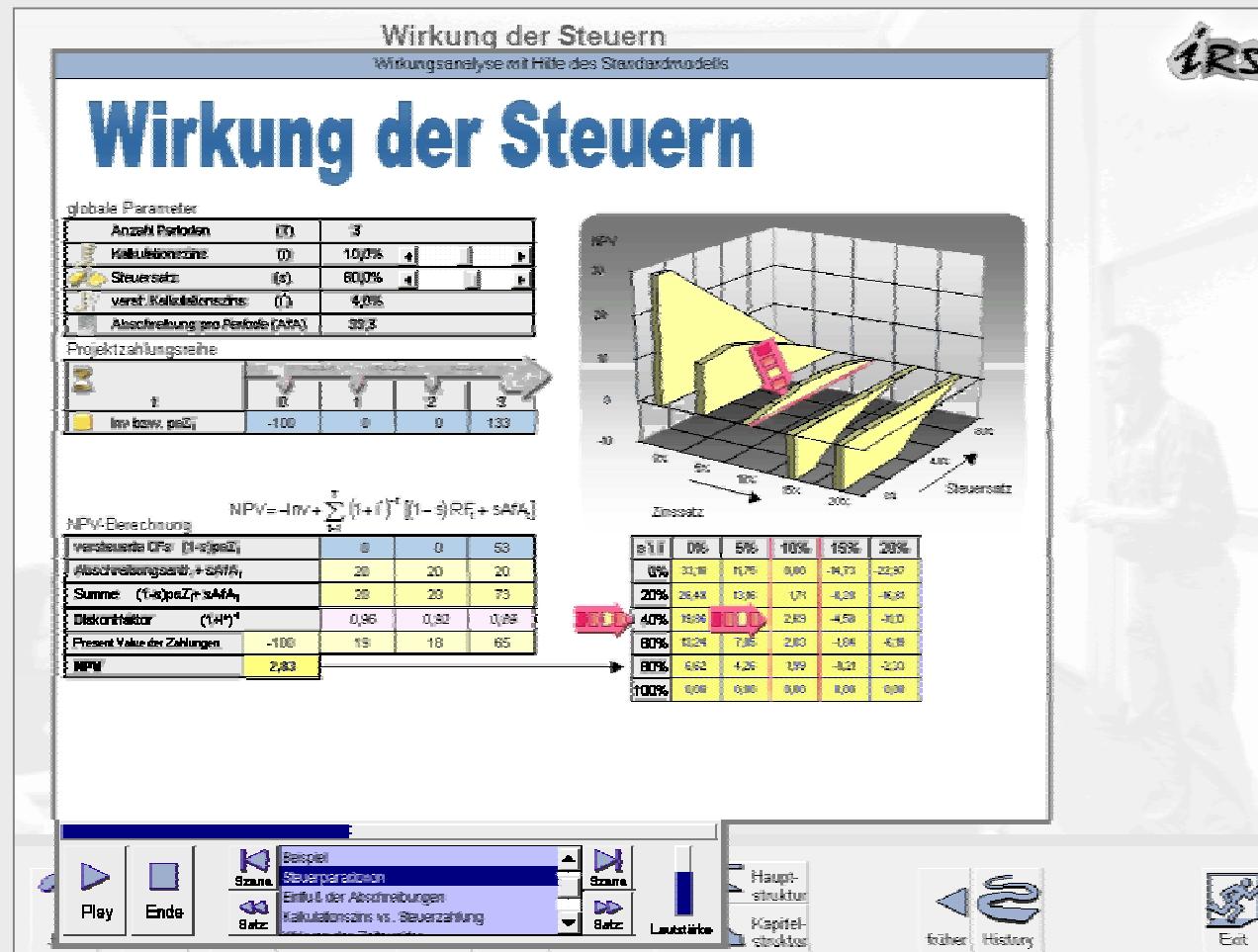
Investitionsrechnung: IRS
award: *digita* 1998

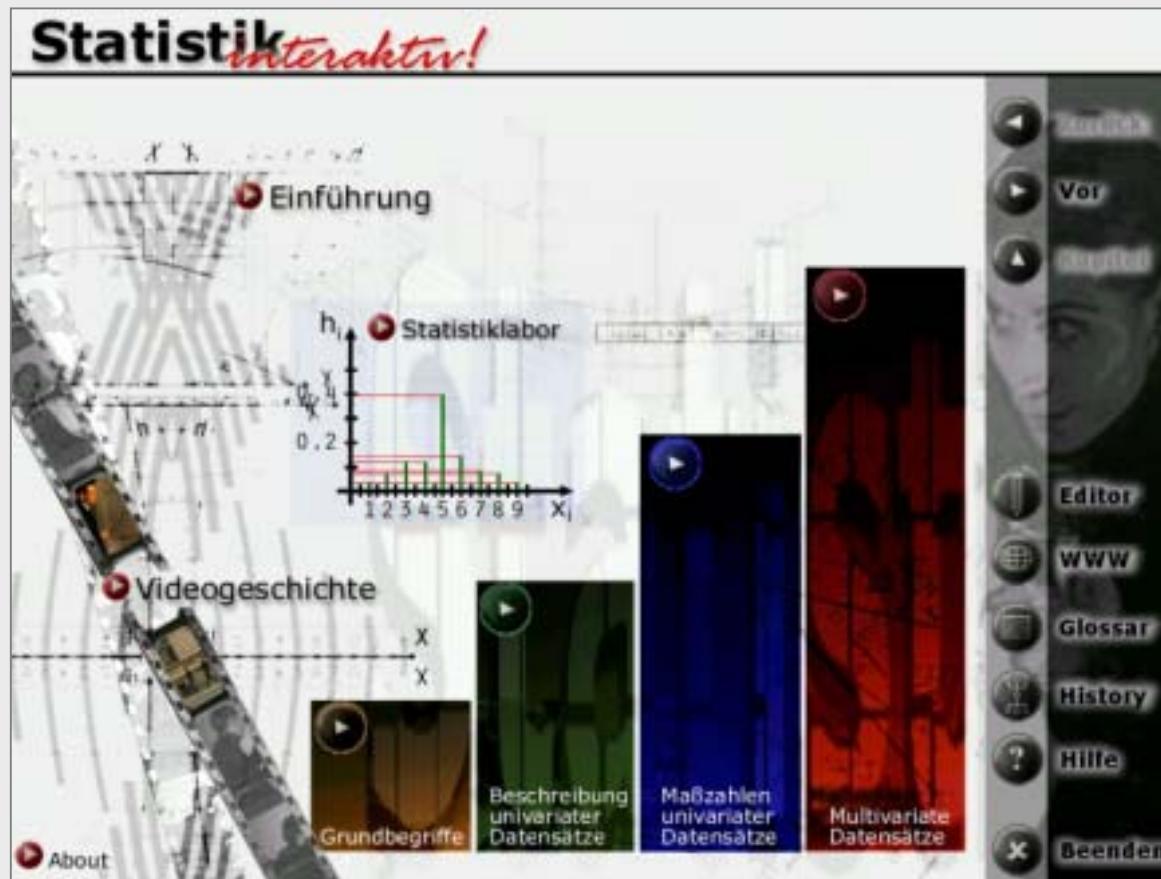


Statistik - Grundausbildung: Statistik *interaktiv*
award: *digita* 2000
distribution via Springer - Verlag









Partners:

- FU Berlin
- Uni Bielefeld
- Uni Hamburg

Learning Net

Topic: Establishment of distributed learning environments (technically oriented)
Partners: 22 professorships from 16 universities
Contact: dialekt.cedis.fu-berlin.de/learningnet/

Neue Statistik

Topic: Full course in Undergraduate statistics (content)
Partners: 13 professorships from 10 universities
Contact: dialekt.cedis.fu-berlin.de/neuestatistik/

New Economy

Topic: New Curriculum (Content)
Partners: 9 professorships from 6 universities
Contact: www.dialekt.cedis.fu-berlin.de/neweconomy/

Distributed Campus

Topic: pre-departure preparation of students from USA for stay in Berlin at FU
Partners: BCGS (9 US Universities), Office for International Affairs (FU), Stanford University

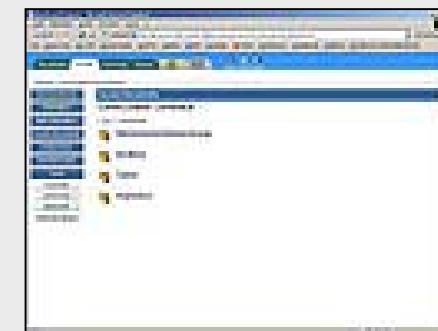
Freie Universität Berlin

CeDiS

Center für Digitale Systeme
Kompetenzzentrum e-Learning/Multimedia

Project „Learning Net“

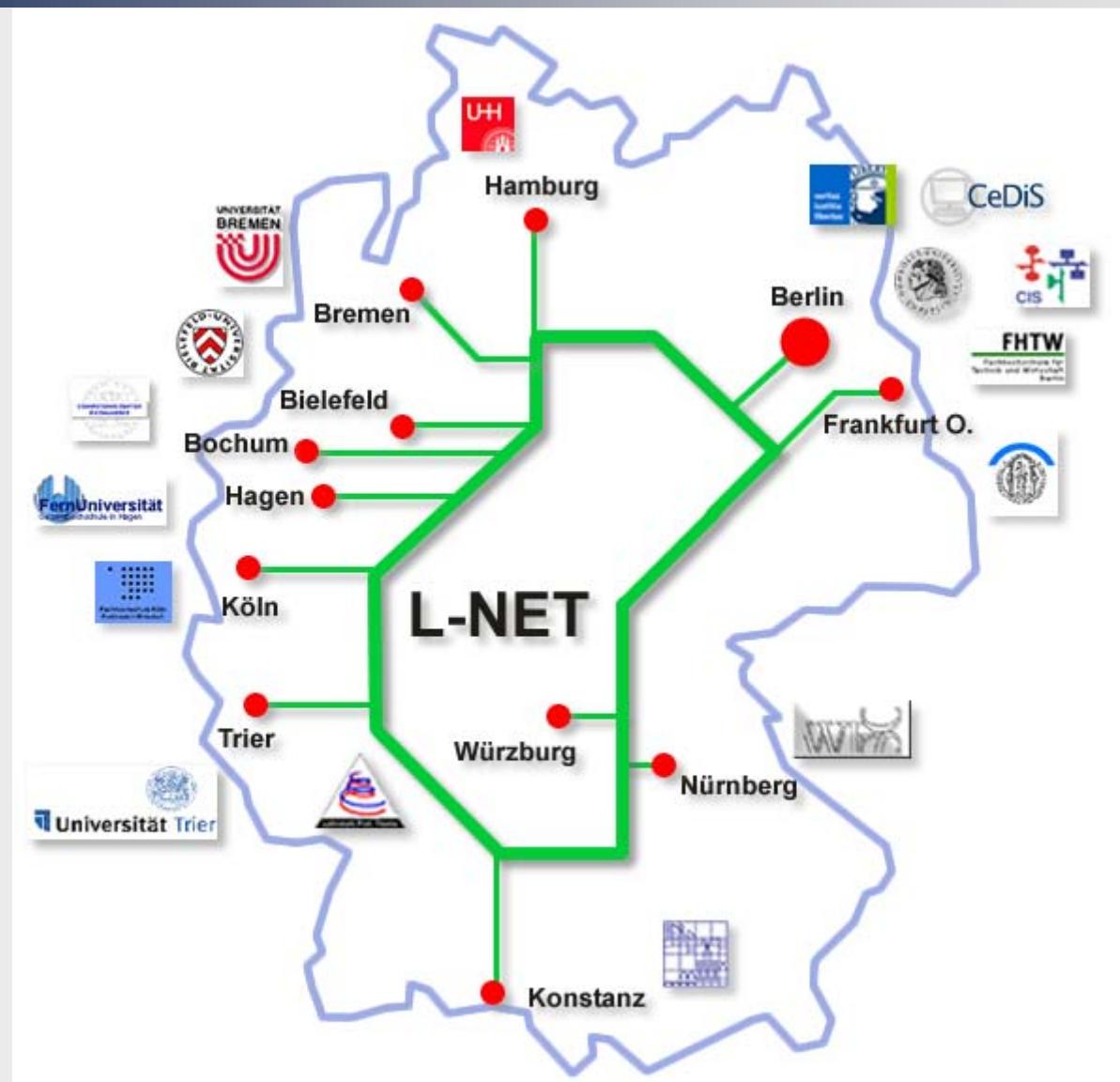
LMS
(Blackboard)

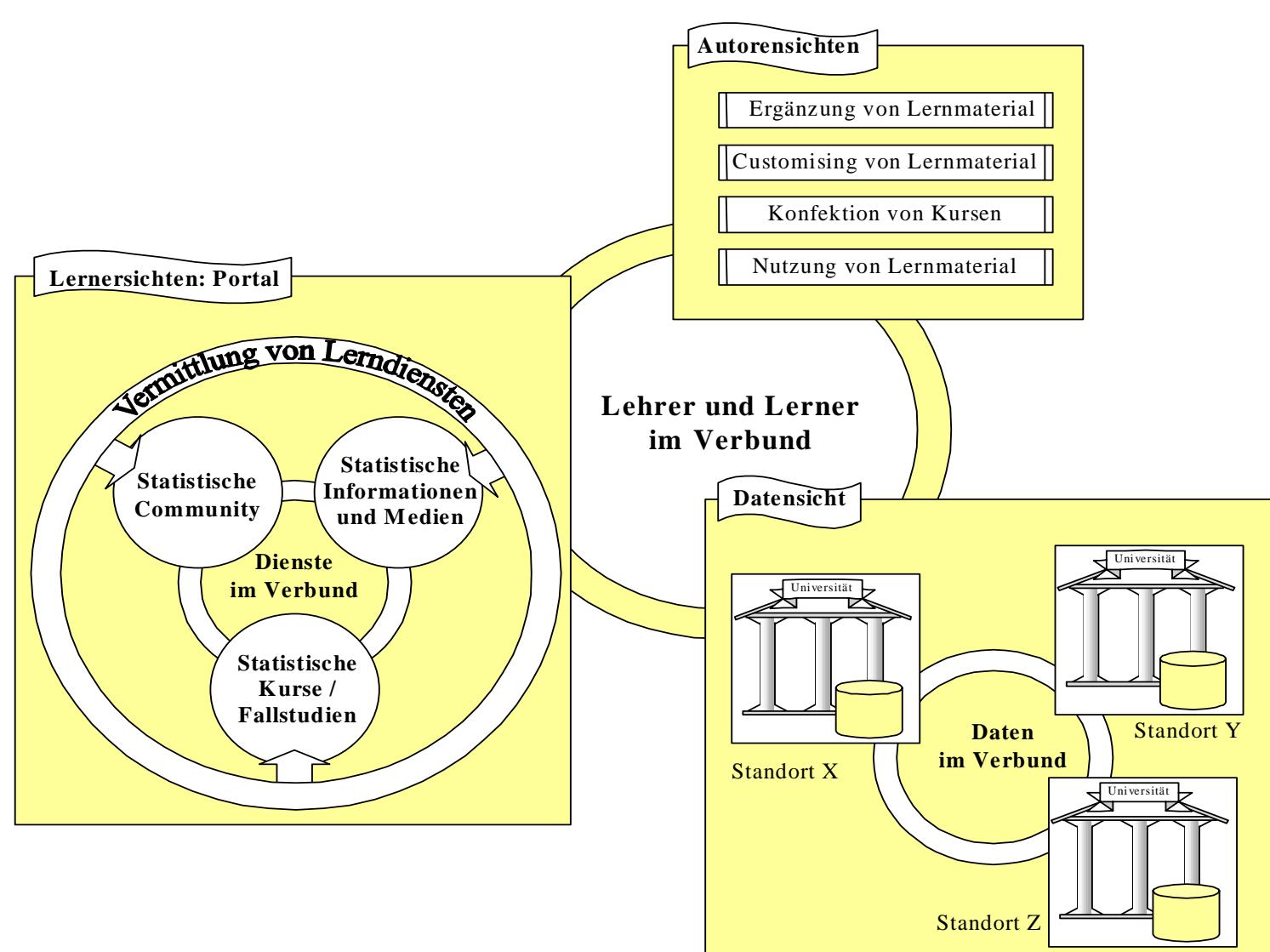


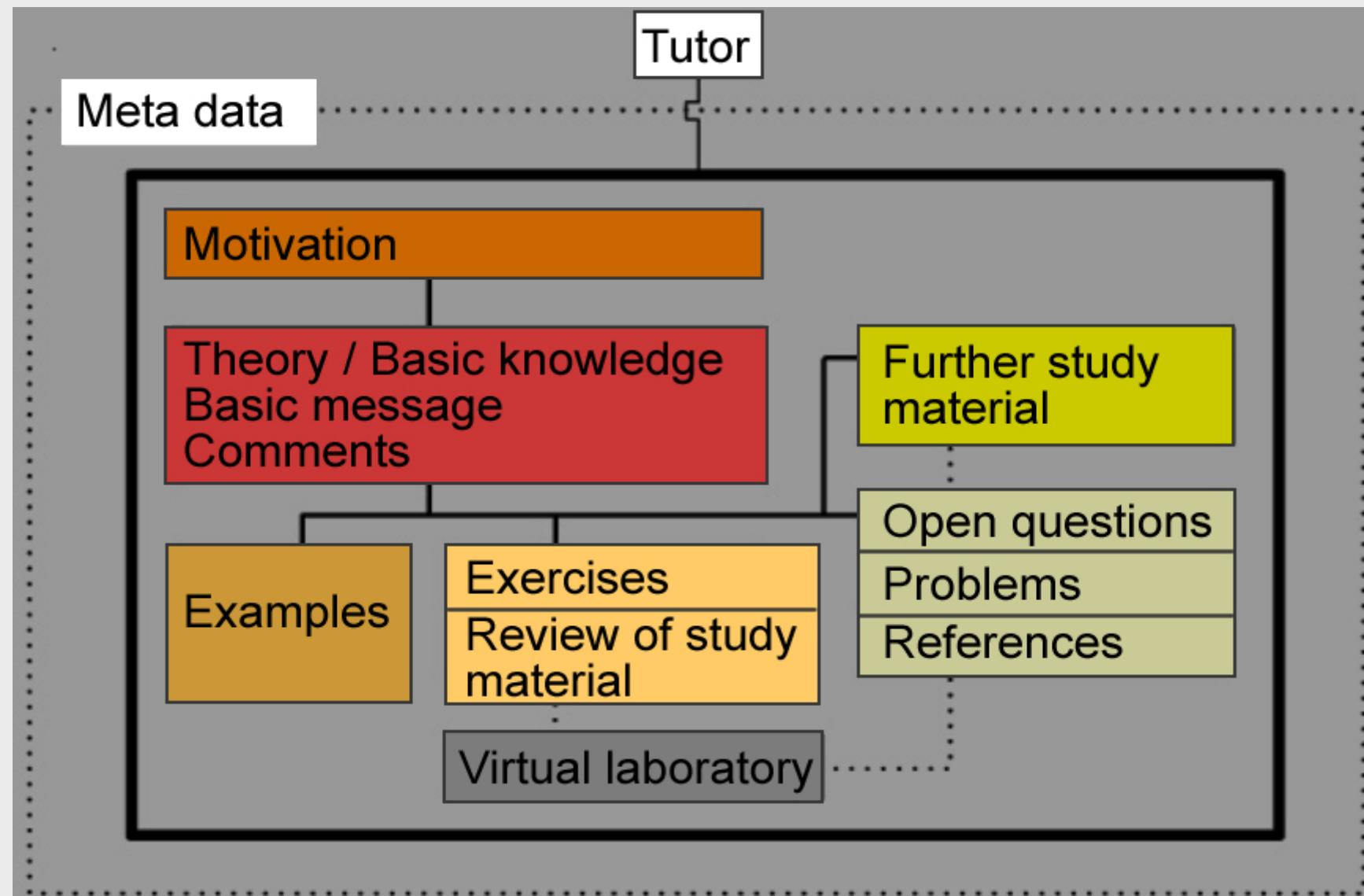
- Constitution of an eLearning infrastructure
- Evaluation and integration of software (e.g. LMS Blackboard)
- Implementation and integration of tools and services
- Establishment of an authoring process for 'mass' production
- Reusability and Recombination of content (XML, Metadata)
- Distributed servers
- Clients: PC/Notebook, PDA, WAP, ...
- Support for content projects
- Project partners: 5 German universities, CeDiS
- Funding: DFN-Verein (German Research Network)

LEARNING NET: Partners

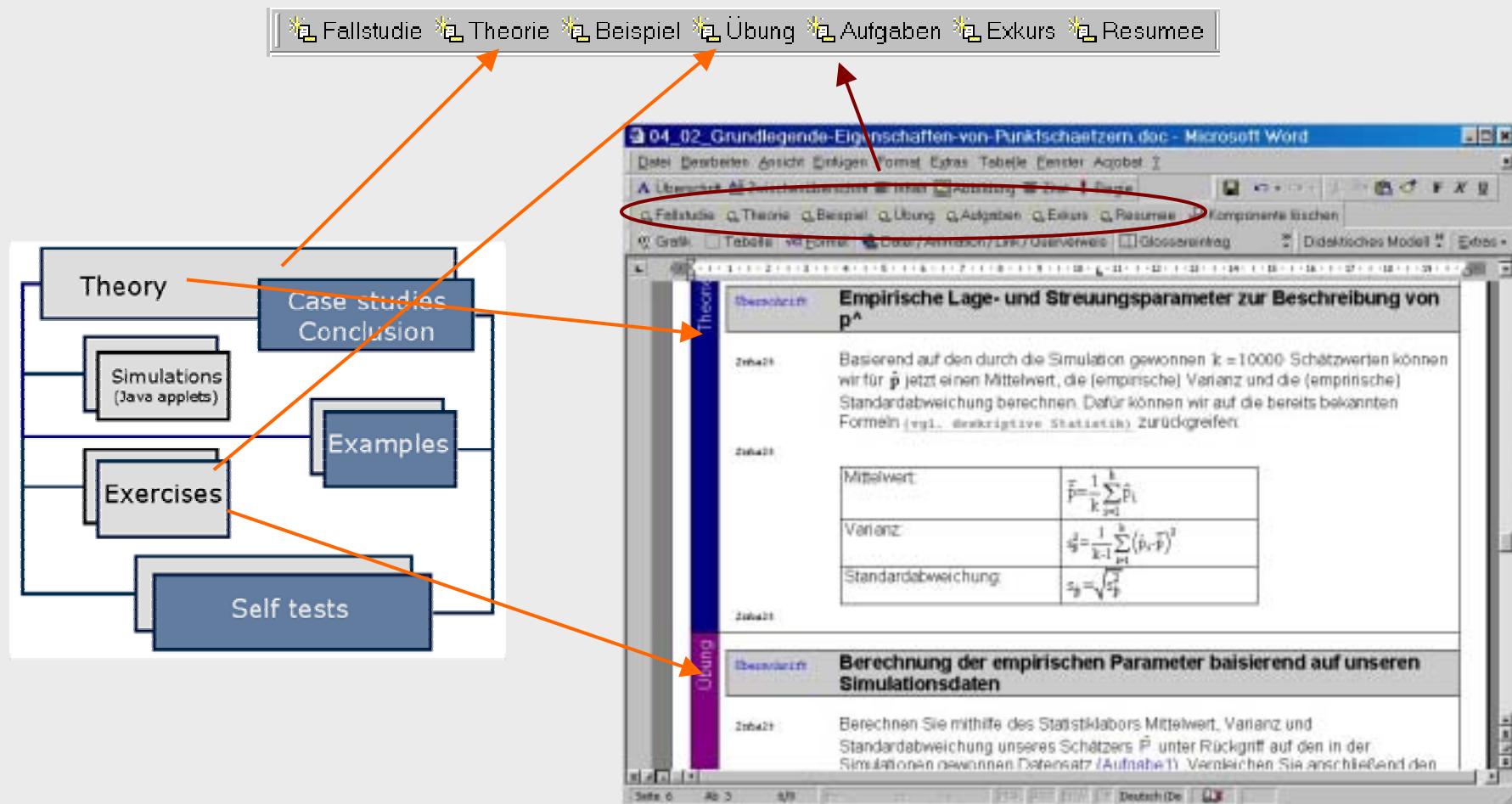
CeDiS







- LME consists of a MS-Word-Document with additional macros (Visual Basic) and dynamic toolbars.
- Learning components according to the didactical model can be inserted via click on the toolbar
- Media elements can be inserted into the content via a special function (button)
- Directives are included as comments for the creation of the enriched media
- Meta data (IMS) for each module can be added
- LME generates XML-Output



Learning Module Editor



Creation of structured
Learning Modules

specify

integrate

generate

Learning Module



HTML with integrated media files

Media production



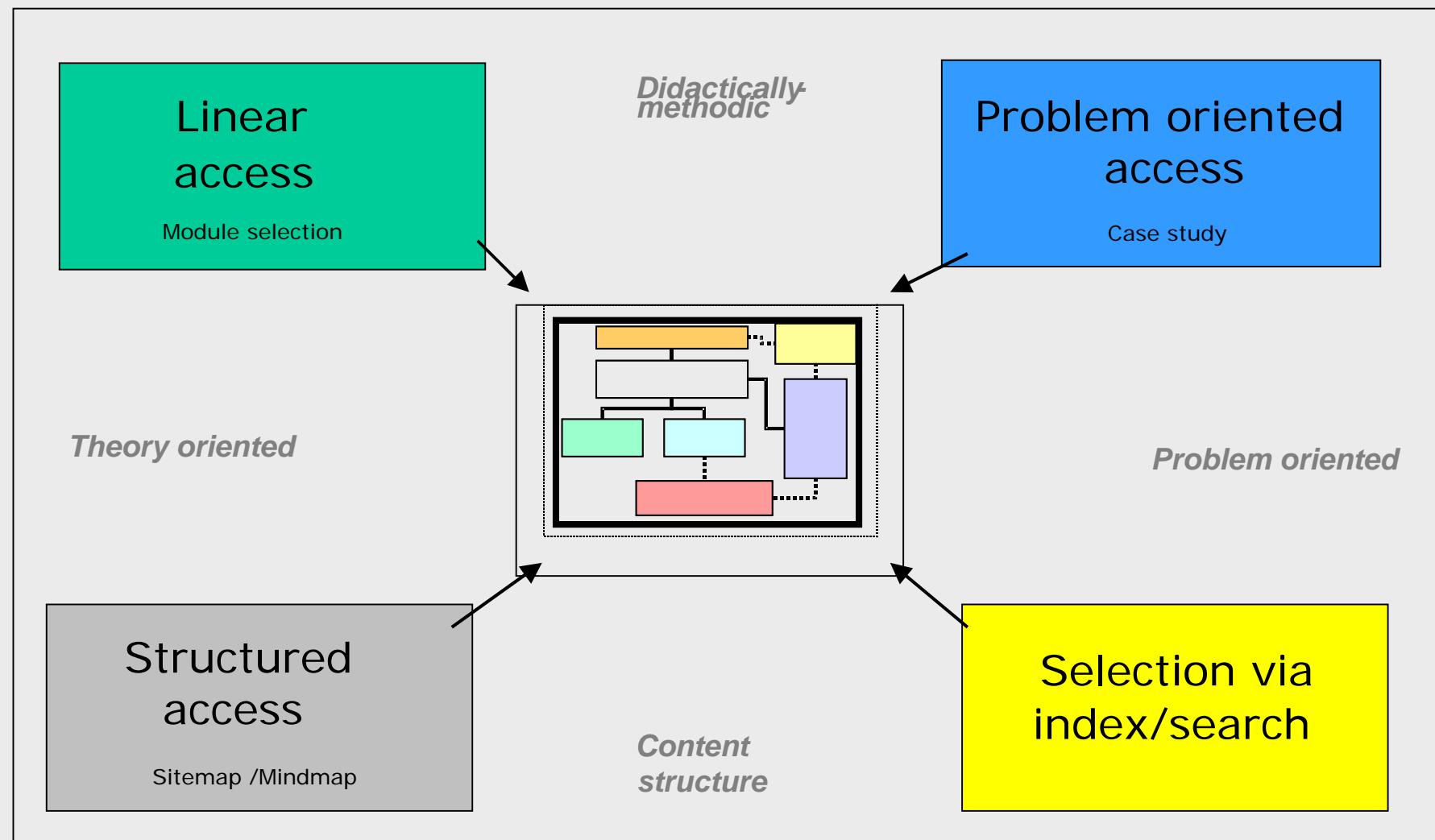
audio, video, flash, applets, ...

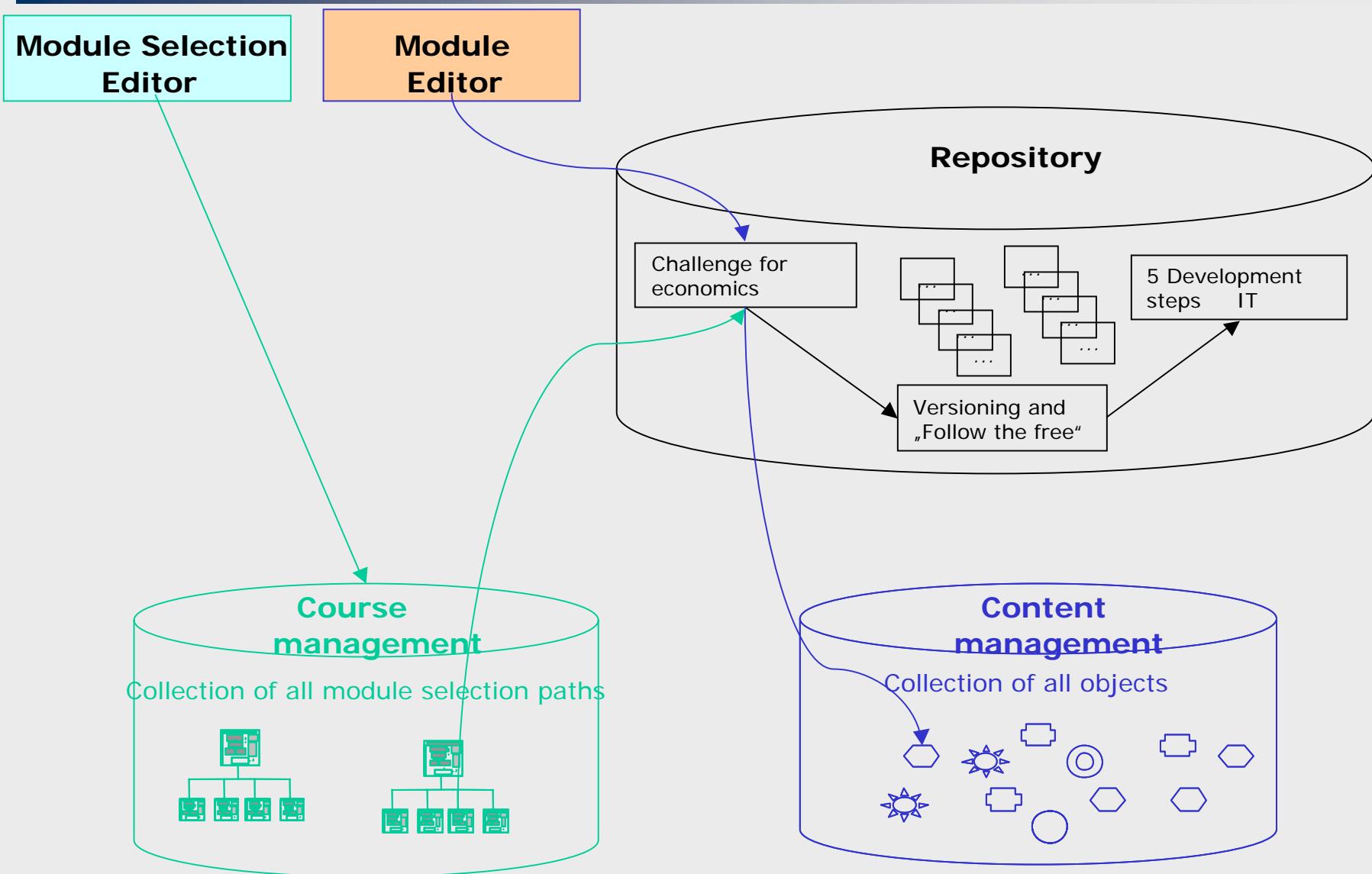
compose
courses

LMS (Blackboard)

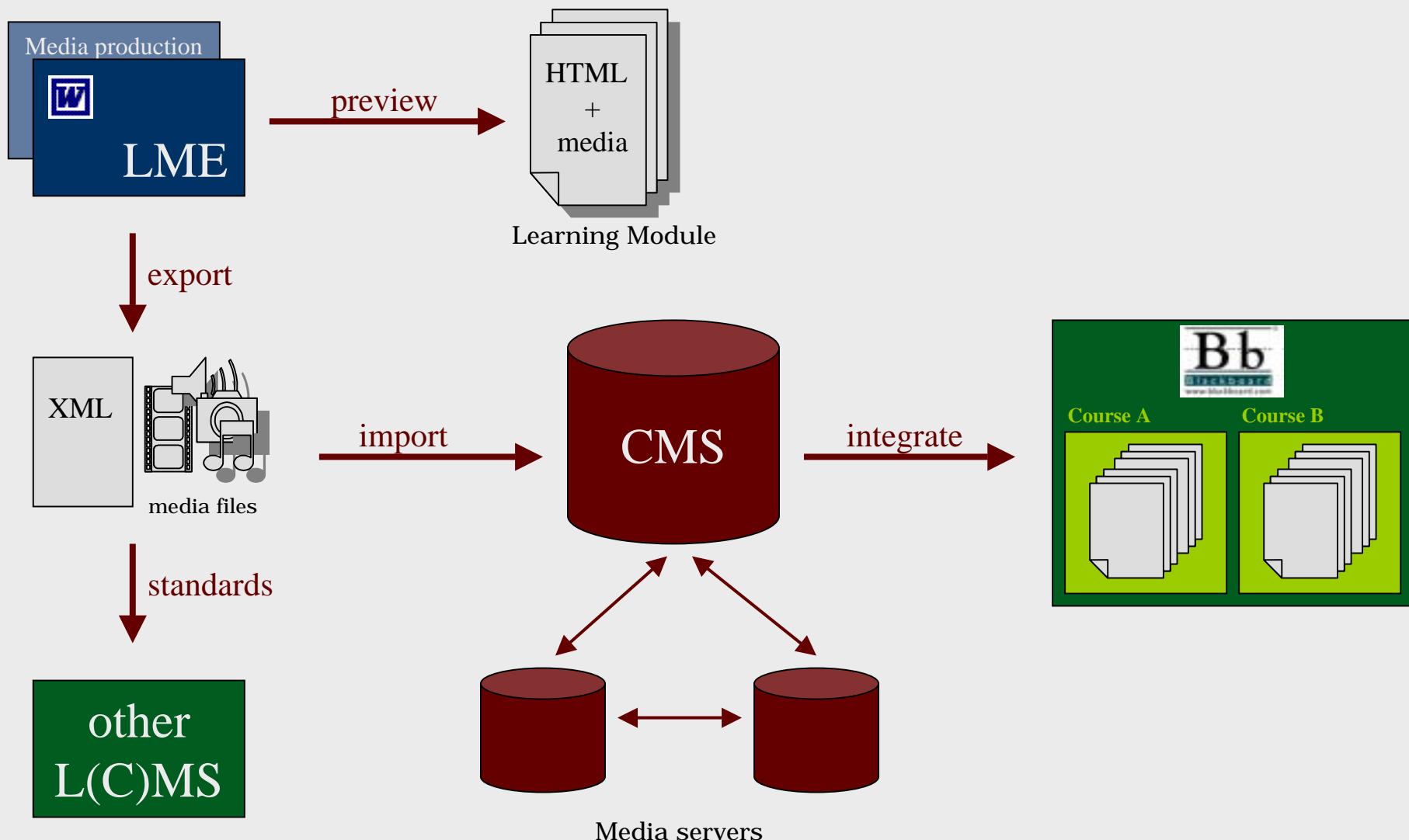


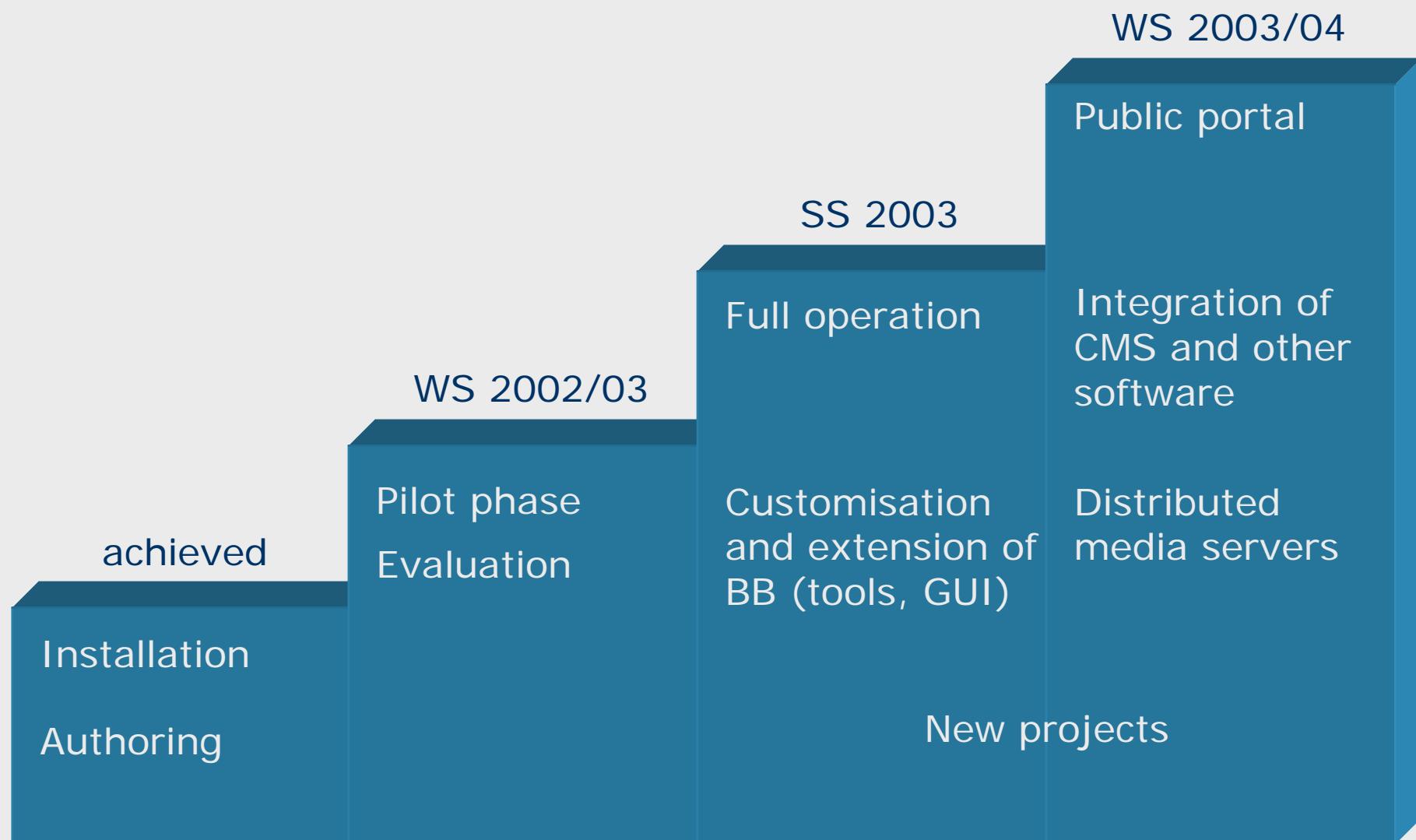
Course documents
within a course





- LMS and CMS
 - Infopark, Clix, Lotus Learning Space, Knowledgia, Hyperwave, WebCT, BlackBoard etc.
 - Problem I:
Implementation of the didactical model
 - Problem II:
Support for the authors: Course Editor
 - Focus:
Backend, Customizing, production, interface (IMS, LOM etc.)
- ➔ Blackboard





Center für Digitale Systeme
Kompetenzzentrum e-Learning/Multimedia

Project „Neue Statistik“

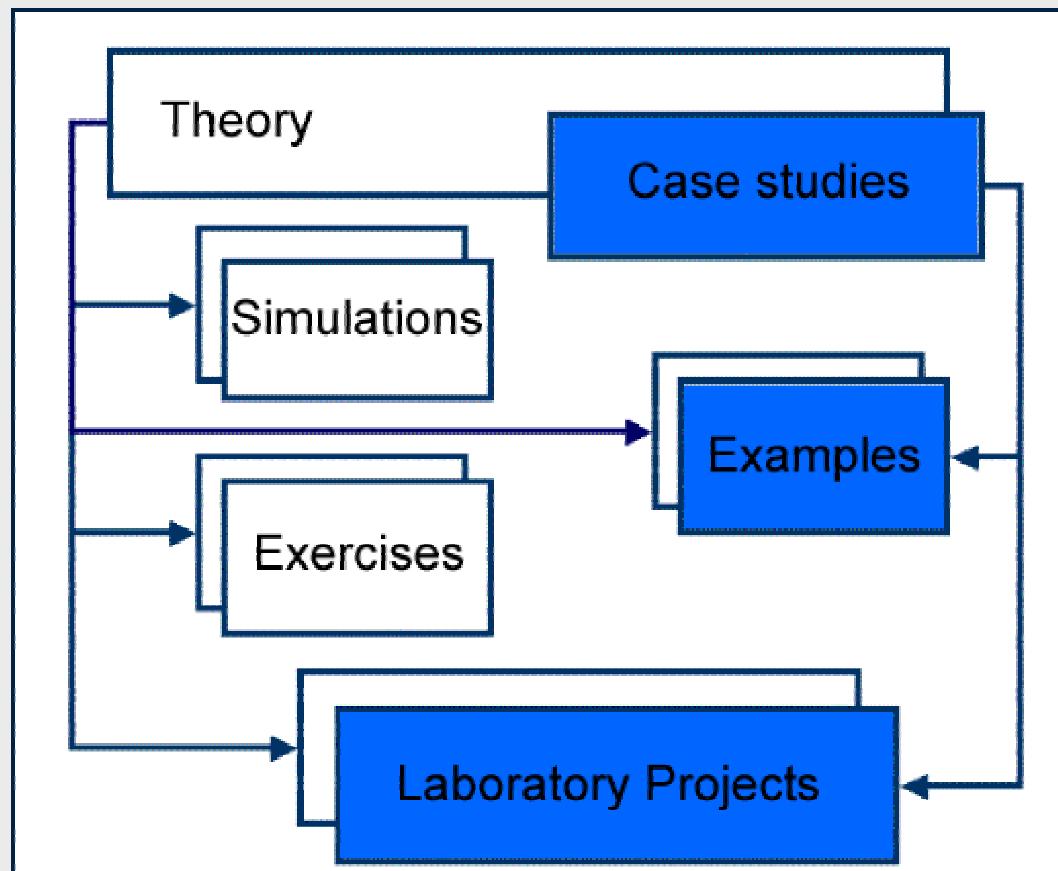


- Web-based learning environment for basic studies in statistics
 - Establishing a more explorative and experimental way of learning and teaching statistics at University level
- Development of multimedia-based, interactive learning material
 - Learning modules, Java-applets, flash animations, case studies, Statistical Laboratory
- Modular Design
 - Development for different academic disciplines like economics, political science, medicine, veterinary medicine and geography

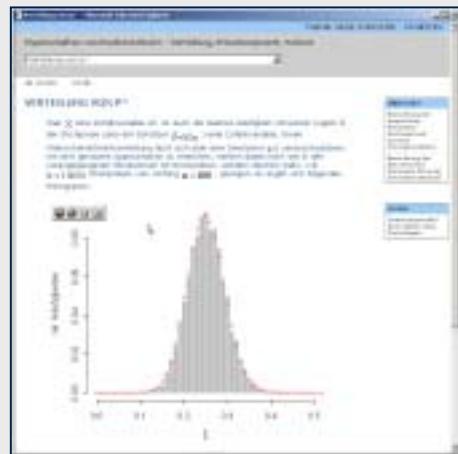
NEUE STATISTIK: Partners

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Learning Modules



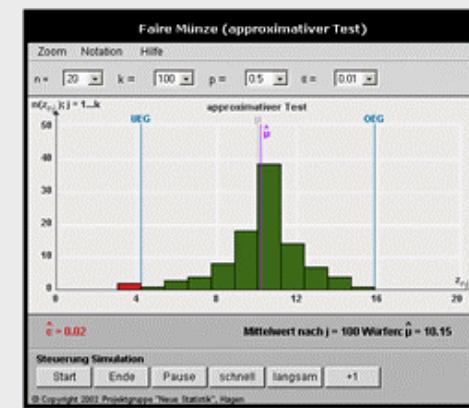
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Flash-Animations



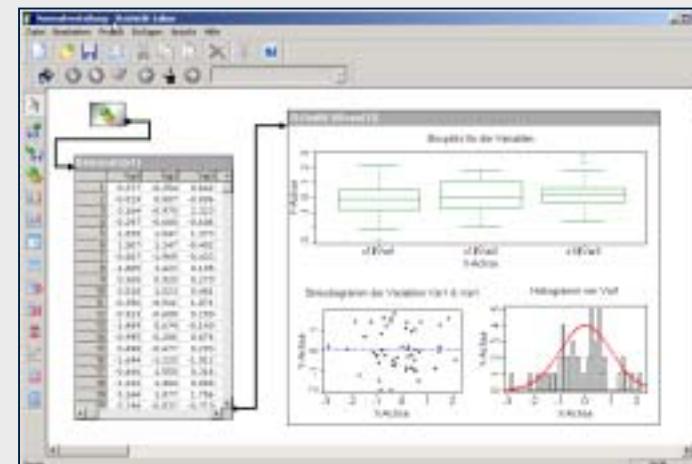
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Java-Applets



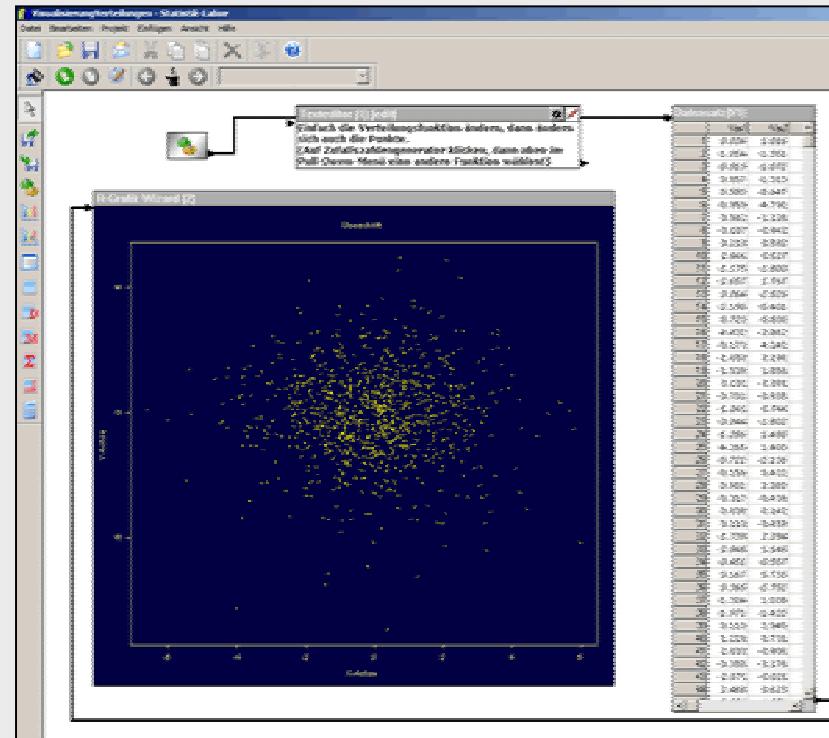
+ Case studies

+ Statistical Laboratory





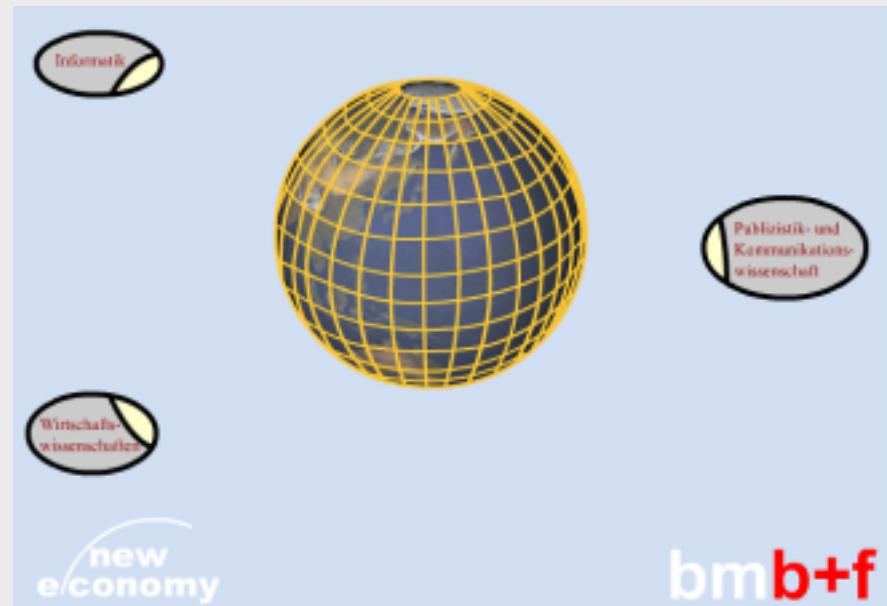
- Object-oriented, interactive and complex tool based on the statistical R-Engine
- Creating statistical exercises, step-by-step solutions and simulations by instructors
- Exercising statistical methods and solving statistical problems by students



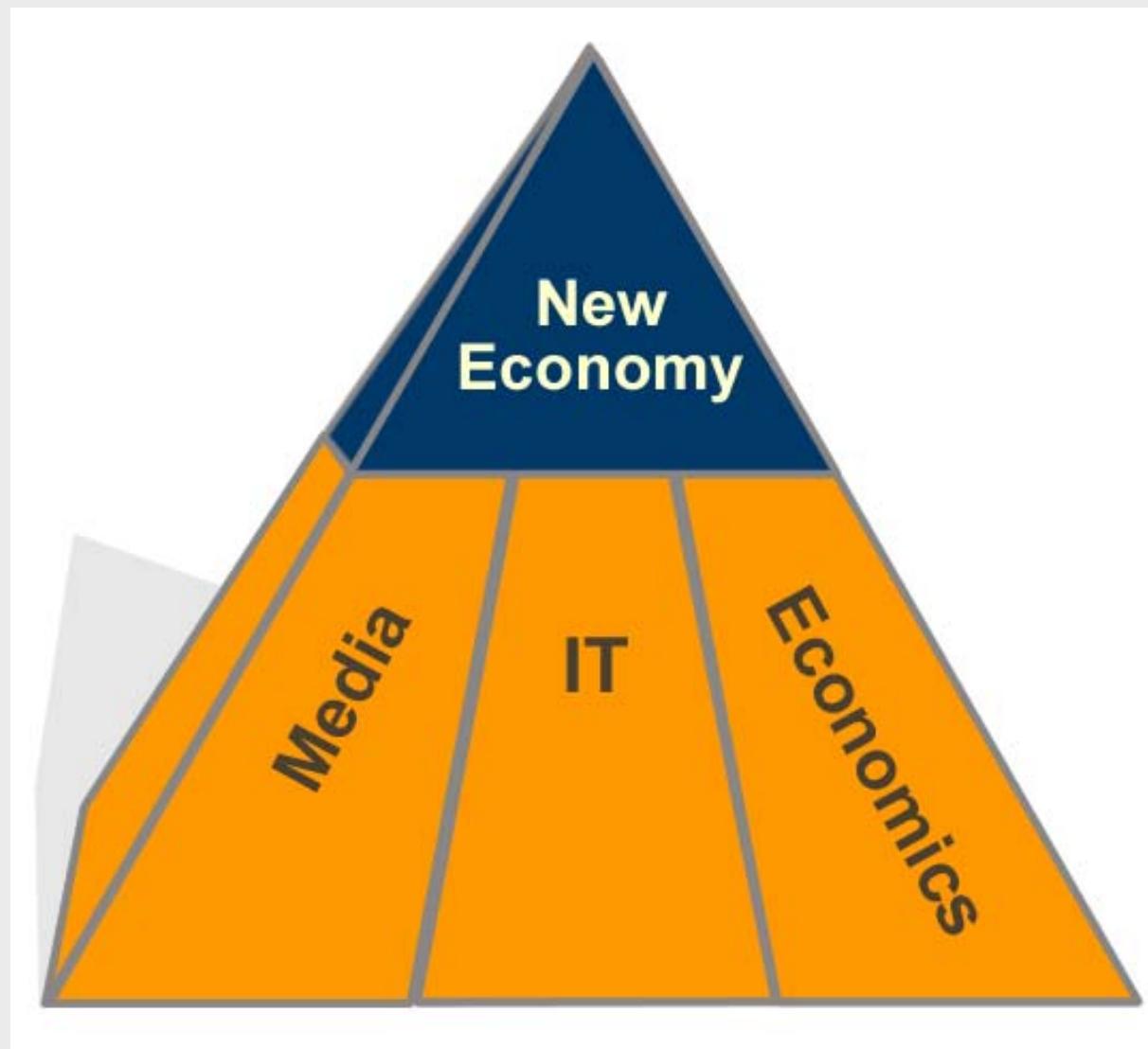
- In regular use at several German universities
(University of Berlin, University of Hamburg, European-University Viadrina Frankfurt/Oder ...)
- Use in broad educations setting:
 - Addition to face-to-face courses
 - Multimedia tutorials
 - Self-study
 - Online-Courses
- Neue Statistik on the web:
<http://www.dialekt.cedis.fu-berlin.de/neuestatistik>

Center für Digitale Systeme
Kompetenzzentrum e-Learning/Multimedia

Project „New Economy“



- Development of a multidisciplinary online curriculum for the following areas of research: economics, computer science, media and communication science
- Develop a virtual environment for exploration of new economy concepts
- Transform traditional learning material in multimedia learning units (English version)
- Using the multimedia learning units in different disciplines and learning scenarios



NEW ECONOMY: Partners

CeDiS



Economics:

- FU Berlin: Prof. Dr. Michael Kleinaltenkamp
Marketing of Services, Business-to-Business Marketing, Innovation Management, Customer Integration, Competition Strategies
- Universität Trier: Prof. Dr. Rolf Weiber
Customer Satisfaction Management, Data-Base Marketing, Adoption-Diffusion-Acceptance
- Ruhr-Universität Bochum: Prof. Engelhardt,
Prof. Gabriel, Dr. Gersch
Economic Rules of New Economy, Customer Integration Technology, E-Services, Business-to-Business
- Universität Würzburg: Prof. Dr. R.Thome
eProcurement, Supply Networks, Knowledge Management, CRM, Government to Consumer
(eProcurement: Desktop Purchasing System)
- FHTW Berlin: Prof. Dr. Günter Heger
Communities (B-to-B, B-to-C), Business Plans (B-to-C, B-to-B, B-to-G), Virtual Market Places

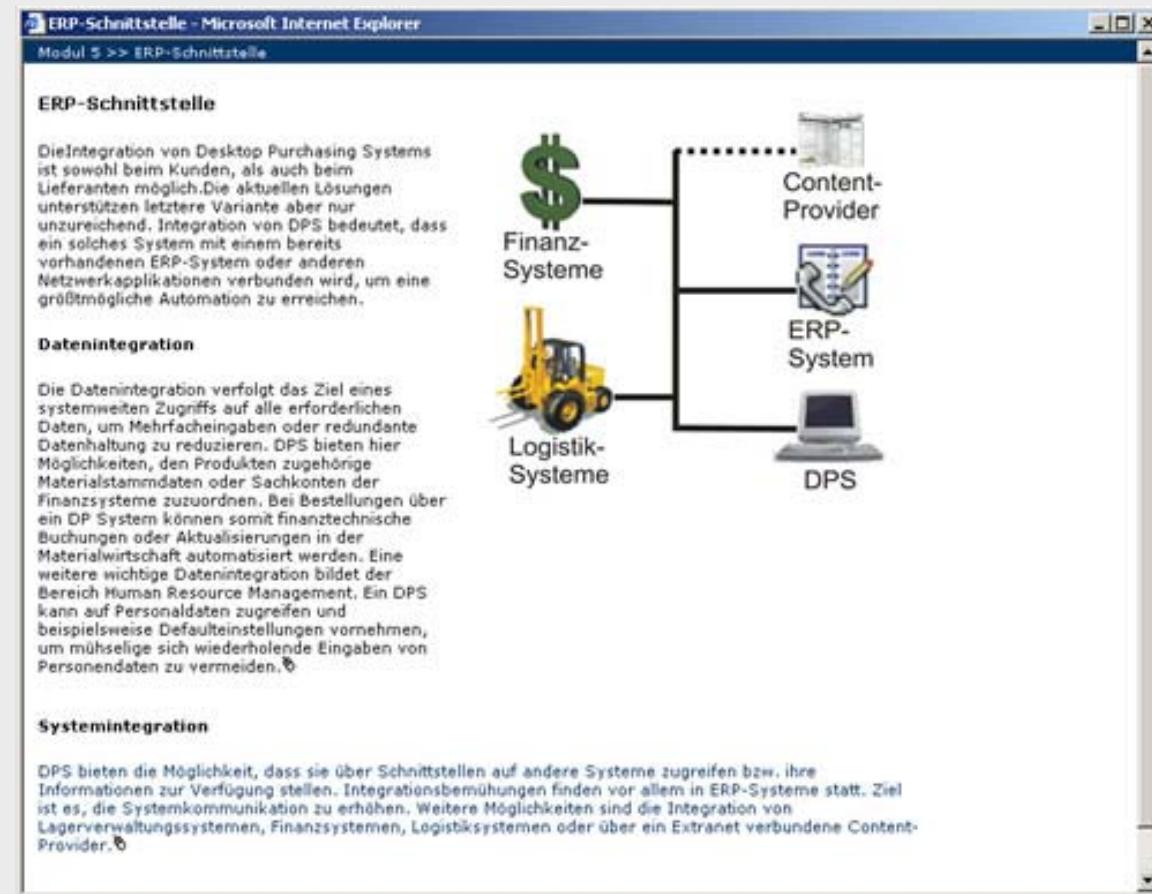
Computer science:

- TU Berlin: Prof. Dr. Herbert Weber
Internet Technology, E-Logistics, Virtual Markets, CRMS, ERMS
([Fallstudie Webflowers](#))
- HU Berlin: Prof. Dr. Wolfgang Coy
social and legal conditions
conflict about the right of intellectual property
(Soziale und rechtliche Rahmenbedingungen,
Konflikt um das Recht auf geistiges Eigentum)

Media and communication science:

- FU Berlin: Prof. Dr. Axel Zerdick
Internet Economy, Media Economy, Economy of Time and Attention
([Convergence of the Media and Communications Sector](#))

- transformation of traditional learning material in multimedia learning units with support of the Learning Module Editor
- development of case studies and simulations which can be combined with different multimedia learning units
- first use of multimedia learning material in winter semester 02/03
- different learning scenarios:



- traditional lectures additional multimedia learning material
- replacing traditional lectures with multimedia learning material



1/7 →

Convergence of the Media and Communications Sectors

- Convergence
- Digitalisation and Deregulation
- Structural Couplings
- First Stage of Convergence
- Second Stage of Convergence
- Coupled Value Chains
- New Economic Structures

Convergence

Companies from the media and communications sectors are in a state of considerable uncertainty:

„What is my market, where are the boundaries and who are the decisive players?“

The reason for the insecurity is a development known as convergence.

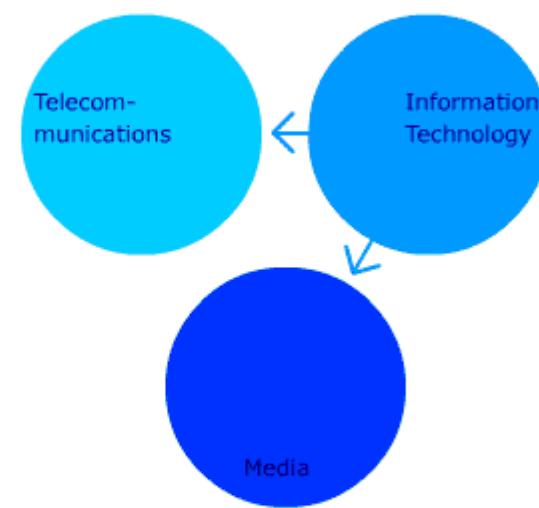
Convergence does not refer to a single event, but rather a **evolving process of progressive fusion** between three industrial sectors or markets that originally operated more or less independently from one another, i.e. the media, telecommunications and information technology sector. The concept of convergence designates

- an overlapping of technologies (in particular transmission technologies) and
- the integration of the respective value chains and
- a general unification of the markets concerned.

Driving forces behind the convergence are situated in four areas:

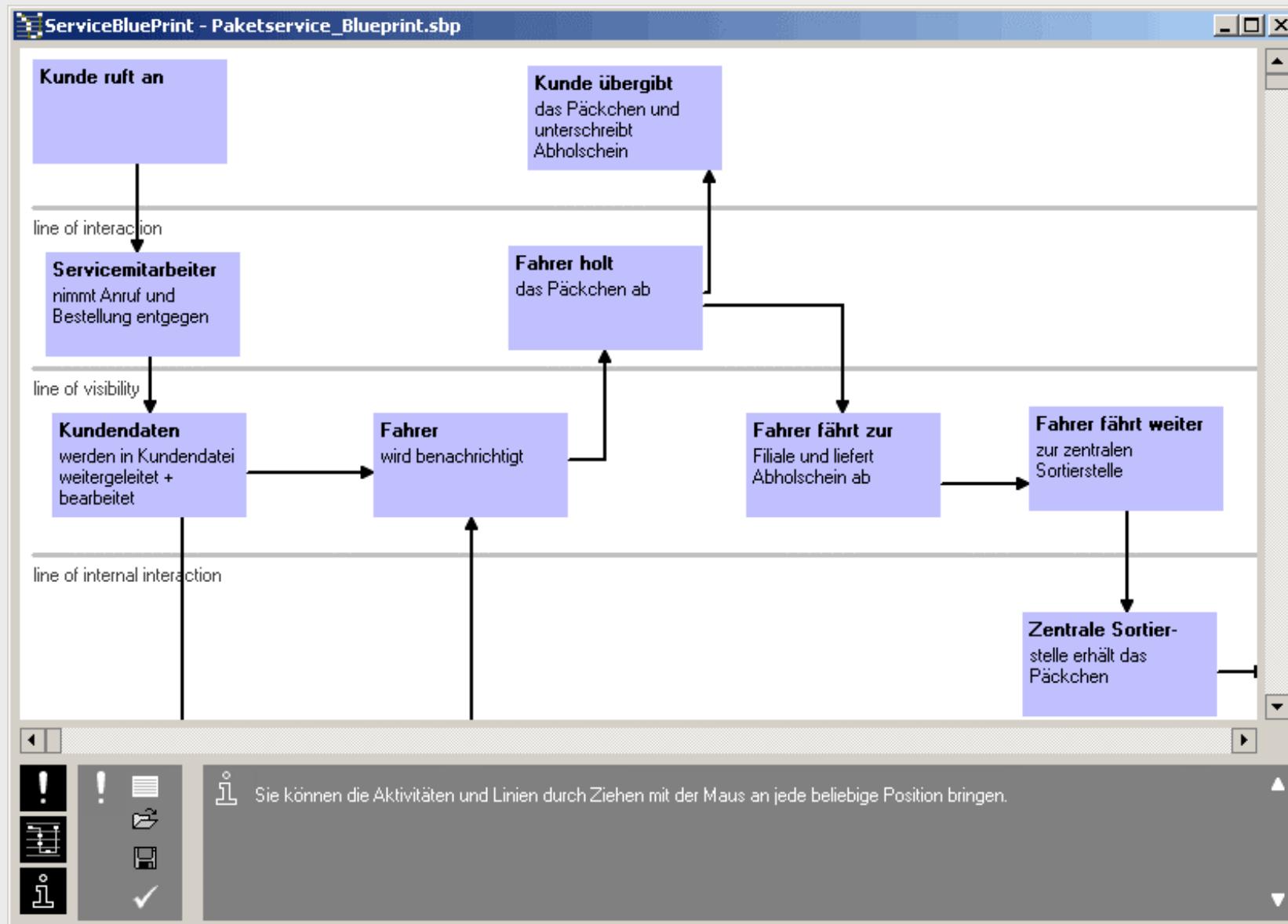
- Technology
- (De-) Regulations
- Demand and
- Competition

Three Industries with Points of Contact



Three Industries with points of contact

NEW ECONOMY: Blueprint Simulation Tool



Freie Universität Berlin

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Center für Digitale Systeme
Kompetenzzentrum e-Learning/Multimedia

Project „Distributed Campus“

- Pre-departure preparation of BCGS students for their stay in Berlin, at FU
- Increasing information and organisation *before* arrival in order to facilitate orientation on site
- Concrete language preparation for „every-day-use“, bringing the students to the same level
- Making familiar with academic working procedures in German universities – contrast to American universities
- Preparing FU lecture content for „common ground“ of all students

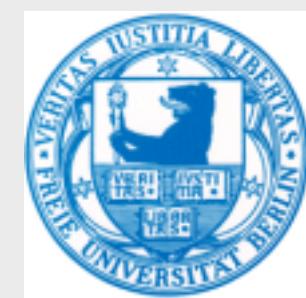
DISTRIBUTED CAMPUS: partners

CeDiS



STANFORD

CORNELL



VASSAR



CeDiS



Yale University

Princeton University



University life

- **academics:** course offer, reading list, academic work
- **administrative:** deadlines, admission
- **services:** library, mail
- **non-academics:** sports, music

Social life

- forum, chatroom
- night life
- VHS
- ...

Cultural life

- virtual tour: Berlin
- sightseeing
- BCGS program

Every-day-life

- work
- health
- housing
- press
- ...

- Learning environment for BCGS students
 - Bi-lingual: German *and* English
 - Course character
 - Check up on material via exercise, test
 - Online tutorial support
 - Chatroom for preliminary contact to German students and returned BCGS students
- Strong cooperation necessary
- with students from BCGS and STU who currently are in Berlin
 - with lecturers from FU, BCGS and Goethe Institut

- Is learning with multimedia more effective?
- How to produce ,aha'-effects?
- Are there simple and good models of evaluation?
- How to integrate the authority of the Instructor?
- Design reusable Content Modules
- Exploit the use of games
- High level tools for multimedia learning software?
- How to build intelligent navigation systems?
- How to create adaptive learning-environments?
- Can there be ,learning-agents' ("things that teach")?

THANK YOU FOR YOUR ATTENTION!

*For further information please visit:
www.cedis.fu-berlin.de*