



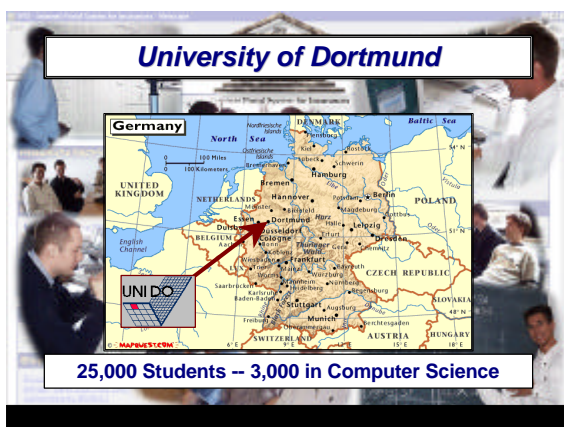
International Education Week

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The IPSI Project Group

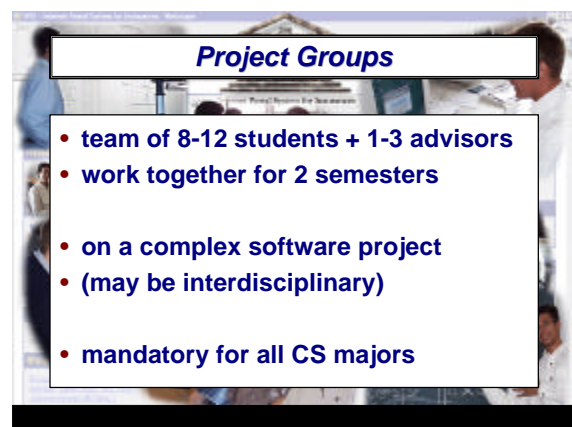
University of Dortmund, 1999-2000



University of Dortmund

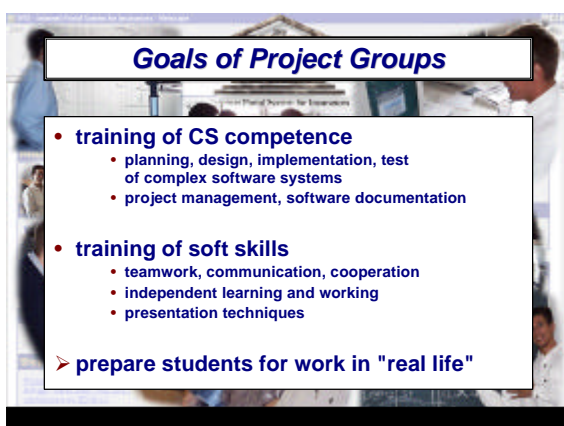


25,000 Students -- 3,000 in Computer Science



Project Groups


- team of 8-12 students + 1-3 advisors
- work together for 2 semesters
- on a complex software project
- (may be interdisciplinary)
- mandatory for all CS majors



Goals of Project Groups

- training of CS competence
 - planning, design, implementation, test of complex software systems
 - project management, software documentation
- training of soft skills
 - teamwork, communication, cooperation
 - independent learning and working
 - presentation techniques

➤ prepare students for work in "real life"



Realizing an Integrated Electronic Commerce Portal System

Matthias Book, Volker Gruhn, Lothar Schöpe

Chair of Software Technology
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Internet Portal System for Insurances

Americas Conference on Information Systems - August 11, 2000 12/26

A Portal for Insurance Agents

- combines and integrates
 - information and applications
 - which the agents need for their work
 - on a mobile platform
- to increase
 - productivity
 - company loyalty



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Software Process

- Requirement Analysis
- Subsystem Identification
- High-Level Architecture
- Cut-Through Prototypes
- GUI Design
- Object-Oriented Design
- Implementation
- System Test

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Requirement Analysis

- cooperation with insurance companies
- comprehensive tasks → singular actions
- prioritized and documented:

Req ID	Requirement	Priority	Type	Rationale
EP-F/1.2.3	All shop items must be accessible via a product hierarchy.	1	MUST	Users are familiar with the concept of a hierarchy and can find items there easily.
EP-F/1.2.4	A full text search may be provided to find products.	3	MAY	The search facility serves as a backup in case the user can't find an item in the hierarchy.

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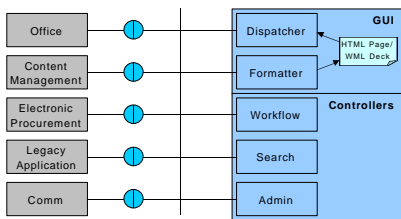
Subsystem Identification

Office	Content Management	Electronic Procurement	Legacy Applications	Comm	Admin
e-Mail Folders	Product Portfolio	Office Material (Toner, ...)	Partner Database	Sending Reminders, Messages, etc.	User Management
Address Book	Company Handbook	Promotional Material (Flyers, ...)	Contracts Database		Monitoring
Calendar	Marketing Information	Company Services (Courses, ...)	Premium Calculator	by Fax SMS e-Mail	Search
To-Do List	Best Practice Solutions				Portal-wide Full Text Searches

Logos: Microsoft, PIRONET, SmartStore, Partner DB, sendfax, yaps, JavaMail, Sun

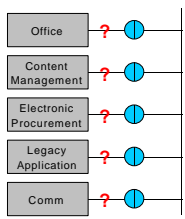
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High-Level Architecture



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Cut-Through Prototypes



- Question:** Subsystem integration feasible?
- Requirement:** Key features accessible via adaptors
- "Proof":** "Quick & dirty" adaptor implementations

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GUI Design

- Extensible layout
 - Formatters for different media
 - Custom libraries of GUI elements
- Control flow charts
 - Identification of controller/formatter classes

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Object-Oriented Design

- Goal: Simple subsystem integration
- UML use cases, class diagrams
- Boundary classes
 - encapsulate subsystem functionality
- Business objects (e.g. User, Task)
 - transported between subsystems

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Legacy Integration

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Implementation

- Distributed implementation
 - Subsystems on separate machines
 - Middleware: CORBA
 - Code distribution: CVS
- Languages
 - Java
 - Visual C++

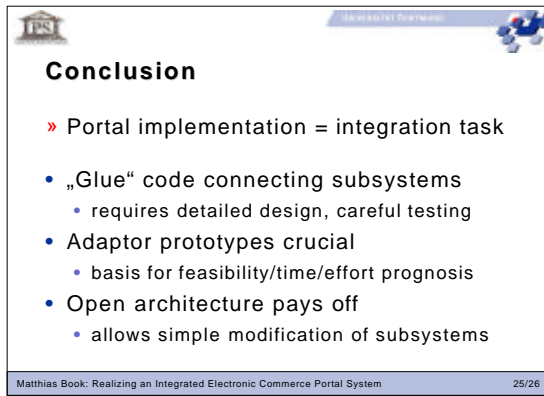
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System Test

- Class Test
 - Class functionality ok?
- Subsystem Test
 - Code review; subsystem boundary ok?
- Integration Test
 - Subsystems' interfaces ok?
- System Test
 - Workflow and GUI ok?

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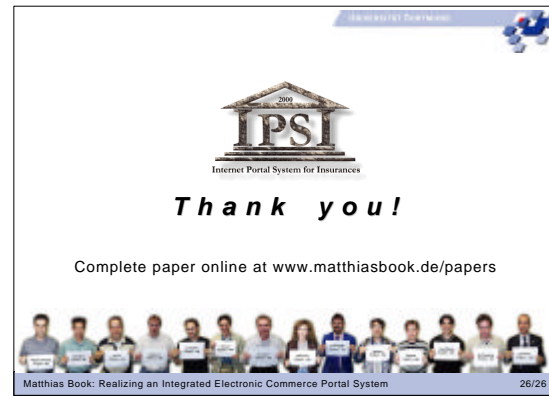
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Conclusion

- » Portal implementation = integration task
- „Glue“ code connecting subsystems
 - requires detailed design, careful testing
- Adaptor prototypes crucial
 - basis for feasibility/time/effort prognosis
- Open architecture pays off
 - allows simple modification of subsystems

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PSI
Internet Portal System for Insurances

Thank you!

Complete paper online at www.matthiasbook.de/papers

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