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Business Information Systems Unit 1

Dr. Martin Hepp

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Profile

2005 -	Senior Researcher, Digital Enterprise Research Institute (DERI), University of Innsbruck	
2003-2005	Assistant Professor of Computer Information Systems, Florida Gulf Coast University, Fort Myers, Florida, USA	
2000-2003	PhD in Management and Information Systems, University of Wuerzburg, Germany	
1994-1999	Diplom-Kaufmann (M.B.A.), Business Administration and Management, University of Wuerzburg Majors: Information Systems, Operations Research, Law	

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Logistics

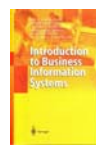
- **Classes**
 - Oct 3: Unit 1
 - Oct 10: Unit 2
 - Oct 17: *needs to be rescheduled*
 - Oct 24: *needs to be rescheduled*
 - Oct 31: Unit 3 (13.00-15.00)
 - Nov 7: *needs to be rescheduled*
 - Nov 14: Unit 4
 - Nov 21: Unit 5
 - Nov 28: Unit 6
 - Dec 5: Unit 7
 - Dec 12: *needs to be rescheduled*
 - Dec 19: Unit 8+9: 13.00 – 17.00 (**make-up; no regular classes**)
 - Jan 9: Unit 10
 - Jan 16: Unit 11
 - Jan 23: Unit 12
 - Jan 30: **Exam during class time (13.00-15.00)**
- **Classroom:** HS 11
- **Office Hours:**
 - By appointment only
 - please contact me by e-mail, martin.hepp@deri.org

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Resources

- **Textbook**
Wigand/Mertens/Bodendorf/König/Picot/Schumann:
„Introduction to Business Information Systems“
Springer, 2003
- **Additional Materials**
Will be made available or announced in class
- **Course Web Page**
<http://www.heppnetz.de/teaching/bis> (*)
<http://www.der1.at/teaching/lectures/winter06/bis.html>



Slides will be made available on the Web page **after (!)** the respective unit.

(*) coming soon.

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What are „Business Information Systems?“

- Business Information Systems as a discipline addresses the **„conceptualization, development, introduction, maintenance, and utilization of systems for computer-assisted information processing“** [1] **in enterprises and in the public administration.**
- It is an **interdisciplinary** topic, combining
 - Management Science,
 - Economics,
 - Computer Science, and
 - Logistics.
- Common-of-the-Shelf (COTS) Software, especially large ERP packages like SAP myERP dominate the IT landscape in many organizations. Also, all design and implementation work is subject to cost and time constraints.
- A solid background in this domain is an important cornerstone for any IT professional and is a skill much wanted from employers.

[1] Wigand et al.: Introduction to Business Information Systems

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Preliminary Syllabus

- 1 Introduction to Business Information Systems
- 2 Economics for Computer Science Students
- 3 Business Management for Computer Science Students
- 4 Case Study (Materials available Oct 10, 2005)
- 5 Business Processes and Business Process Management
- 6 Electronic Commerce and Electronic Business
- 7 Enterprise Resource Planning (ERP) and Enterprise Application Integration (EAI)
- 8 Content Integration and Electronic Procurement
- 9 Supply Chain Management
- 10 Standards and Standardization, Numbering and Identification
- 11 Logistics for Computer Science Students
- 12 Course Review / Q&A for the Exam
- 13 Exam

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Exam and Grading

- **First and Official Exam**
Date: January 30, 2006
Time: 1.00-3.00 p.m.
Room: HS 11
- **Alternative dates** as defined in the regulations
please contact instructor

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Attendance Policy

- I need you ☺
- This is a graduate course; **exam topics will include material discussed in class**, not just what's on the slides or in the textbook!

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...why it is good that you are sitting here ☺

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The Future Labor Market: General

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My Competitive Advantages...

I need no food and work all night. I have no family life and won't ask for holidays.

Boring, repetitive tasks? Yeah – I like them! Just give me instructions once and I will be glad to do so exactly, whenever you want it.

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You get the job!

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The History of Automation

Whenever it was feasible to delegate human labor to machines, it soon became cheaper to do so, and human labor has been substituted by investment in machinery.

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The fully automated bookstore

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What Are Our Competitive Advantages?

Computer (so far) can't

- design,
- create,
- organize,
- maintain, or
- improve computers and their usage.

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The Future Labor Market for Computer Scientists: Global Sourcing

Give me a UML diagram and we will code it for you!

Outsourcing

Web Services

Meta-Outsourcing

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The Future Labor Market for Computer Scientists: Global Sourcing

- Once there is a formal representation of a problem, the implementation work to a solution can be done everywhere.
- The more you restrict yourselves to the abstract beauty of a problem, the more you are subject to global competition.
- Create local competitive advantage:
 - domain knowledge
 - develop solutions to real-world constraints
 - develop communication skills
- Two activities can hardly be outsourced on a global scale:
 - Local requirements analysis
 - Finding creative ways of computer applications that require local domain knowledge (e.g. billing systems for ski resorts)

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A Great Chance for Your Career

- There is constant need for individuals who invent new ways to use computers for business purposes.
- This is an **interdisciplinary** challenge, requiring skills in both business and computer technology.

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What is it all about?

Key Goal in Information Systems:

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Eliminate Manual Data Entry

Automatic propagation of information along the value chain **without any media break.**

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Three Reasons and Their Ranks

1. Consistency
2. Timeliness
3. Cost Reduction

Automatic propagation of information along the value chain **without any media break.**

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What's that?

Automated Data Capture
+ Integration with other data

Better Business Decisions

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True Goal

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Integrated / Integration

- The key word is Integrated Information Systems
- Integrated basically means „putting together parts that belong together“.
- Integrating Systems is a prerequisite for automation and a core activity in the context of Business Information Systems.

```

    graph TD
      MIS[Management Information System (MIS)] --> OPS[Order Processing System]
      MIS --> HRMS[Human Resources Management System]
      MIS --> PS[Production System]
      MIS --> MRPS[Manufacturing Resource Planning System]
  
```

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Moving Target / The Shepherd's Problem

- Systems have an individual path of evolution
 - data formats
 - internal representation
 - business logics

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Not from Scratch / Legacy

- There exist systems in the environment that cannot be simply replaced, for technical or economic reasons
- Those systems are often badly documented and running on outdated platforms using outdated programming languages etc.

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Traditional Systems Development

```

    graph TD
      A[Systems investigation  
Understand problem] --> B[Systems analysis  
Understand solution]
      B --> C[Systems design  
Select and plan best solution]
      C --> D[Systems implementation  
Place solution into effect]
      D --> E[Systems maintenance and review  
Evaluate results of solution]
  
```

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The Cradle Building Problem

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Common-of-the-Shelf Software as Libraries of Best Practice

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Cost / Benefit Driven

- Solutions are decided upon based on measurable gain in productivity, not beauty of the solution
- TCO = Total Cost of Ownership
- Investment theory, interest, risk
- Operational and Strategic impact
- Vendor lock-in
- Decisions under uncertainty

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Supply Chain Management: A Herkulan Business Integration Task

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Thank you!

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