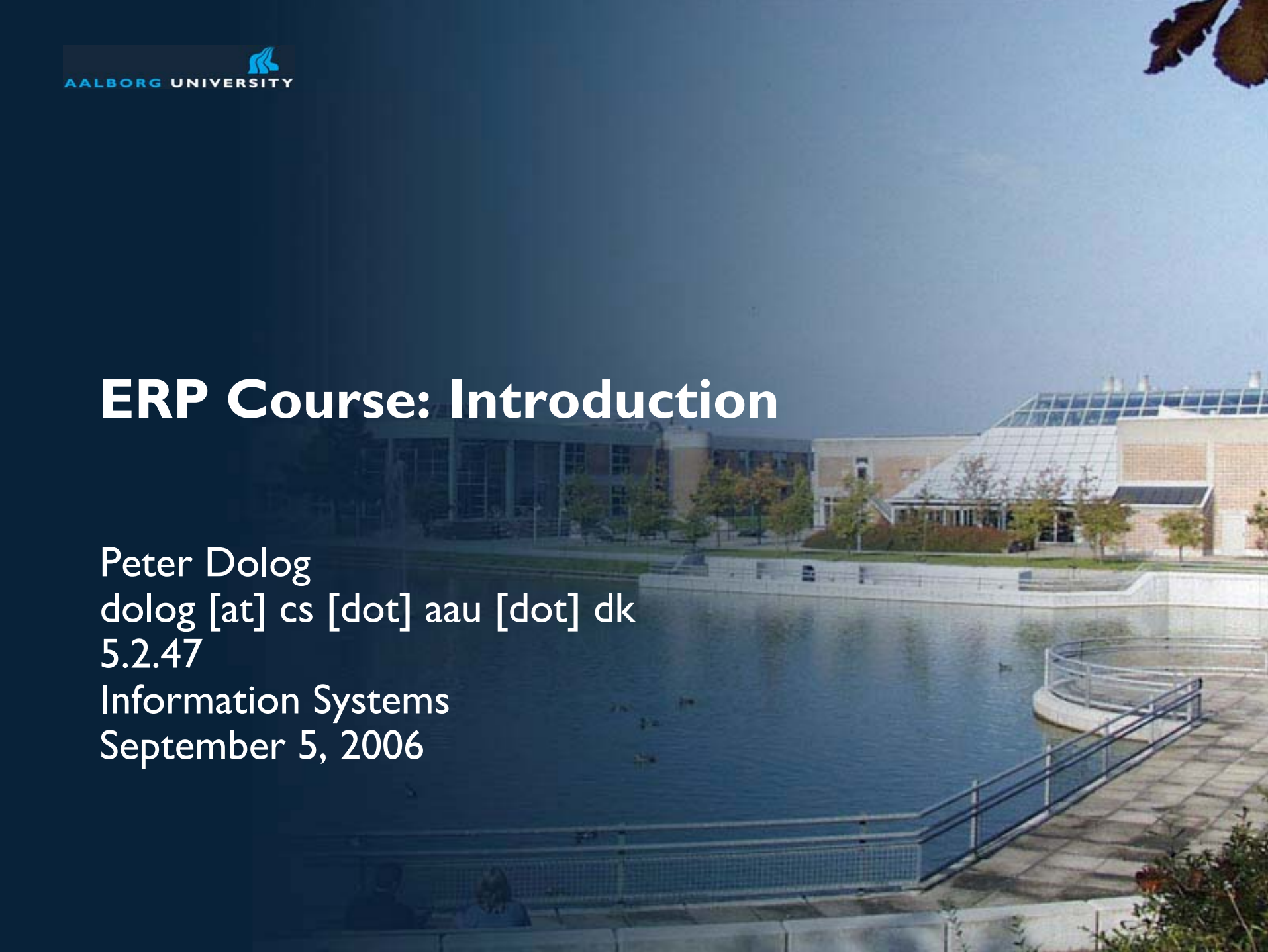


ERP Course: Introduction

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5.2.47
Information Systems
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ERP Course Organization

2 hours lecture (Mondays, Wednesdays – 10:15 – 12:00 or 14:30 – 16:15)

2 hours lab (Mondays, Wednesdays – 8:15 – 10:00 or 12:30 – 14:15)

0.2.12

Lectures in 3 themes:

- ERP domains
- ERP architectures and deployment
- Advanced Topics: SOA, WMF, WS-C

6 Labs

Time to consult: Labs, Lectures

OFBiz lectures and technology advisor: Klemens Schwartz

Lectures

1	Introduction and Course Organization + ERP Package Technology
2	Sales and Marketing Module + ERP Package Technology
3	Accounting and Finances Module
4	Production and Material Module
5	Supply Chain Management Module
6	Human Resources Module
7	Knowledge Management and Learning
8	Analysis Patterns I
9	Analysis Patterns II
10	ERP Systems Development
11	Re-Engineering
12	Management of ERP Projects
13	Workflow Management Systems
14	Enterprise Application Integration
15	Service Coordination Protocols

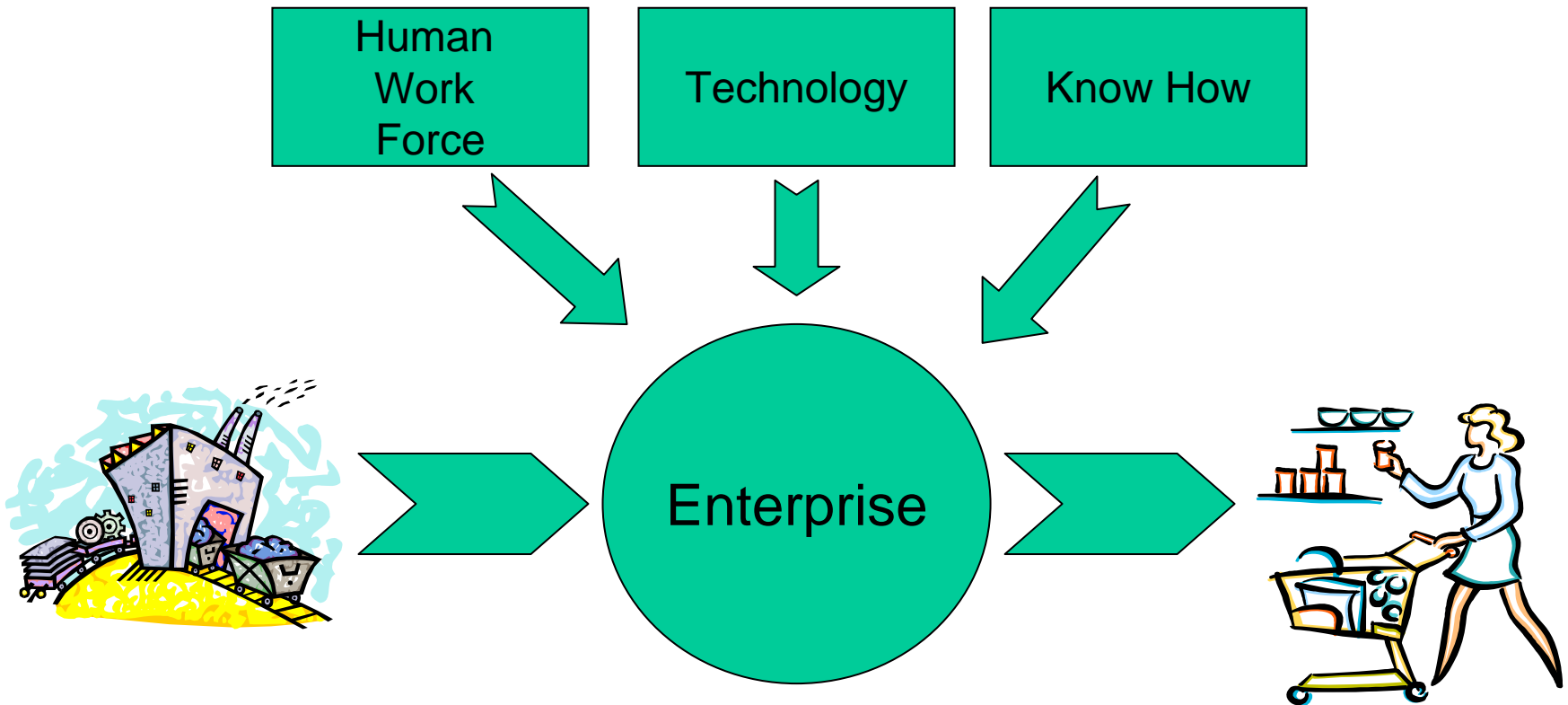
Labs

1	5 – 17 Sep. 2007	Installing and customizing an ERP package OFBiz
2	19 Sep – 26 Sept 2007	Sales and Marketing Module
3	1 Oct – 8 Oct 2007	Accounting and Finance Module
4	10 Oct – 24 Oct 2007	Production and Material Management
5	29 Oct – 31 Oct 2007	Human Resources
6	5 Nov – 12 Nov 2007	Supply Chain Management and Integration

Overview of the ERP Course



A Company



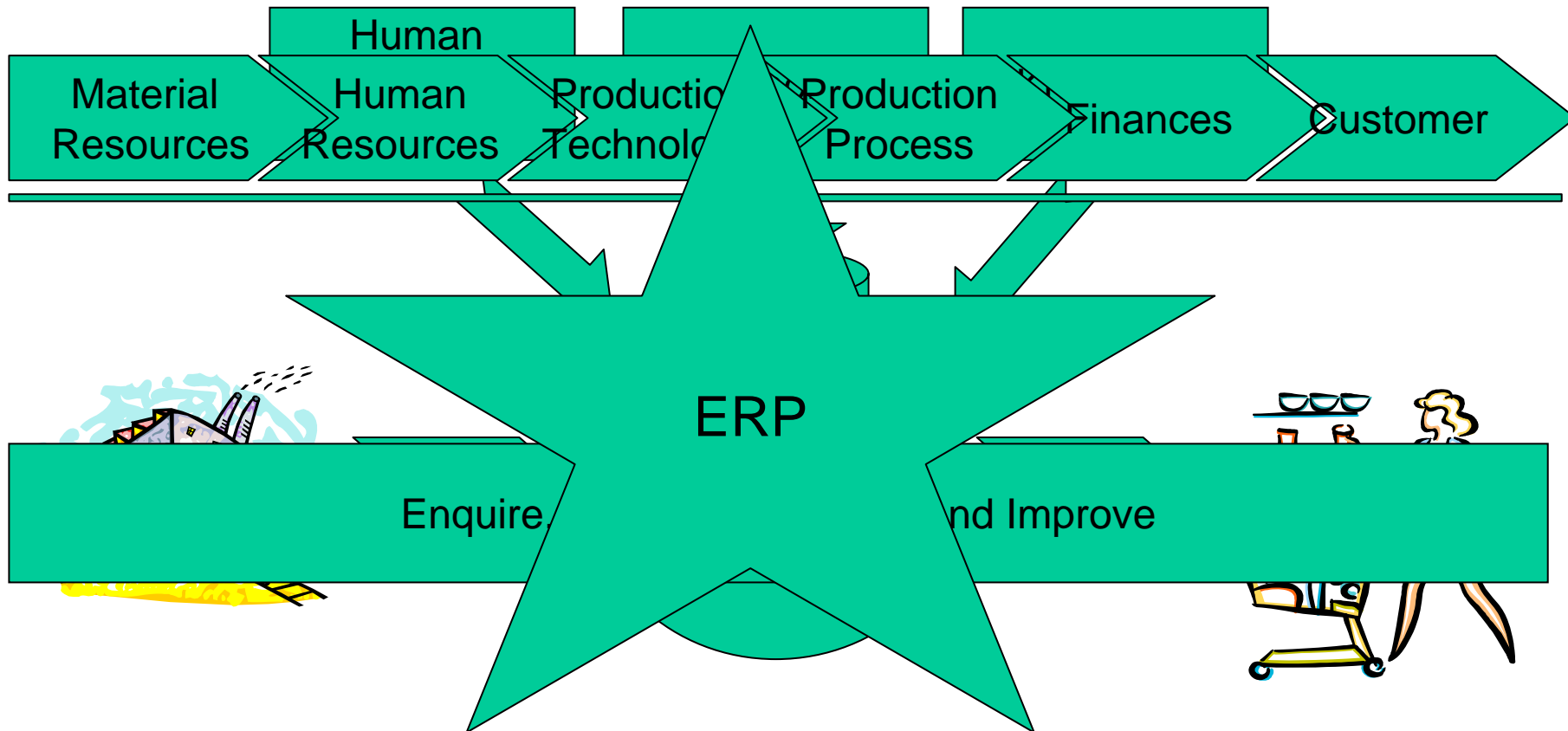
What is ERP System

A system of software tools to manage enterprise data

A packaged business software system to

- automate and integrate majority of business processes
- share common data and practices
- produce and access information real time

A Company



Integrated processes

Supply Chain

Receiving

Inventory Management

Customer Order Management

Production Planning

Shipping

Accounting

Human Resource Management

...

Sales and Marketing

Sales,

Contacts,

Accounts,

Business opportunities

Meetings with contacts

Campaigns

Analysing Sales and Marketing Performance

Accounting and Finances

Main Book

Accounts

Transactions

Invoices

Payments

Analysing Financial Performance

Production and Material

Resources

Machines

Production Run

Machine Planning

Warehousing

Product Configurations

Analysing Performance of Production and Material

...

Human Resources

Requirements for Human Resources

Compensations and Payrolls

Hiring

Further Education

...

Supply Chain

Managing Data Across Organizational Boundaries

Managing Suppliers

Analysing Performance of Suppliers

KM and Learning

Knowledge acquisition

Technologies for knowlege management

Technologies to support electronic learning

Analysis Patterns

Group of concepts representing common construction in business modeling [Martin Fowler: Analysis Patterns]
May be domain related or spanning across several domains
Conceptual models linked to interfaces rather than implementations
Represent a good starting point for any project
Used for communication in project team

Analysis Patterns and ERP

Patterns in account modeling – accounting and finances
Patterns in organizational hierarchies – human resources,
Observation and measurements in corporate finance
Inventories and accounting – accounting and finance
Planning – in production planning
Trading, contracts – customers and suppliers
...

ERP Systems Development

Combination of packaged deployment and customization

Business process change vs. product customization

Integration with other software which exists and is used on place

Focus on proper analysis of organizational structures and work processes

Deploying the whole package or just one module to be integrated with the existing systems

Re-Engineering

Re-engineering from business point of view and from technical point of view

Understanding and optimizing the primary activities behind the modules (value chain) and how they interact with secondary (supporting) activities

Primary activities

Flow of orders and invoices

Process for approving an investment or a purchase

Approval of a new production plan

Credit authorization procedures

and so on

Secondary activities

How electronic mail communication is organized

Human resources organization/skills

Use of technology in the work processes

On-line links to suppliers databases

Workflow Management Systems

Systems that manage and execute work activities

Workflow automation

Business or workflow model as activity graph or event flows graphs

Usually used for workflow automation of administration processes

Binding the functionality of workflow management to functions in ERP system (sending a notification, mail, document to another unit, task for another person,...)

Principles and practices in using workflow management

Management of ERP Projects

Risk resulting from complexity

Technology

Lack of User Involvement

Lack of Management Involvement

Methodological issues

Communication

Management of the risks within the projects

Enterprise Application Integration

Client/Server

Three Tier Architecture

N-Tier Architecture

RPC

Messaging

Service Coordination Protocols

Automatic Conversations
Interaction
Coordination
Protocols
Coordination Architecture

Motivations for ERP

Mary Sumner: Enterprise Resource Planning
Chapter 1



History

Types of Systems	Time	Purpose	Systems
Reorder point systems	1960	to forecast future inventory demand	to manage high-volume production of few products
Material Requirement Planning Systems (MRP)	1970	demand-based planning manufacture of products	focus on marketing, grater production integration and planning
MRP-II	1980	MRP + capacity planning	quality and process control
MRP-II + manufacturing execution planning (MES)	1990	adaptations of production schedules to meet customer needs	focus on the ability to create and adapt new products to customer needs
ERP	late 1990	integrated business process support throughout the enterprise	integrates supplier, manufacturing, and customer data throughout the supply chain

ERP as Integrated System

The goal is to provide quick and effective access to information
From standalone systems to integrated system to support

business processes

Common information model

Standardized interfaces

Systems Attributes

Information Systems – integrated

Coordination – accross business functions

Databases – same meaning across multiple functions

Maintanance – uniform, changes affect multiple systems

Interfaces – standardized

Information – consistent real time information

System Architecture – client/server

Processes – consistent business processes based upon an
information model

Applications – single applications to support certain business
function

Business Attributes

Cycle time (time and cost reduction of business processes)

Transactions processing (reduced costs of multiple updates)

Financial Management

Business Processes (conforms best practices)

Productivity (improvement in financial management and customer service)

Supply Chain Management (linkages with suppliers and customers)

eBusiness (web interface to integrated system)

Information (cross functional data accessed uniformly for planning and control)

Communication (facilitates organizational communications with customer and supplier)

Some Examples of Benefits

Responses to customer billing inquiries in real time at IBM
Storage Product Company (before 15-20min)

Simplification of processes at Boeing, real time access to data
across the organization at Diebold

90% reduction on cycle time for quitations at Fujitsu
and so on

Business Benefits from ERP

ERP Performance Outcomes	Sweeden Average	U.S. Average
Quickend information response time	3.81	3.51
Increased interaction acrosss the enterprise	3.55	3.49
Improved order management/order cycle	3.37	3.25
Decreased financial close cycle	3.36	3.17
Improved interaction with customers	2.87	2.92
Improved on-time delivery	2.82	2.83
Improved interaction with suppliers	2.78	2.81
Reduced direct operation costs	2.74	2.32
Lowered inventory levels	2.6	2.7

Scale from 1 - 5

Motivations to Implement ERP

Replace legacy systems

Simplify and standardize systems

Gain strategic advantage

Improve interactions with suppliers, customers

Ease of upgrading systems

Link to global activities

Restructure company organization

Tangible benefits of ERP implementation

- Inventory reduction 32%
- Personnel reduction 27%
- Productivity improvement 26%
- Order management improvement 20%
- Financial close cycle reduction 19%
- IT cost reduction 14%
- Cash management improvement 11%
- Revenue/profit increase 11%
- Transportation/logistics cost reduction 9%
- Maintenance reduction 7%
- On-line delivery improvement 6%

Intangible benefits of ERP implementation

Information/visibility 55%
New/improved processes 24%
Customer responsiveness 22%
Integration 13%
Standardization 12%
Flexibility 9%
Globalization 9%
Y2K 8%
Business performance 7%
Supply/demand chain 5%

Cost-Benefit Analysis

ERP implementation is an investment decision

It must create measurable benefits

To compare costs of software, services and internal costs to
tangible and intangible benefits

Recurring and non-recurring costs

ERP costs components

Software 24.2% – 30.2%

Hardware 17.8% – 18.5%

Consulting 24.1% – 30.1%

Training 10.9% – 13.8%

Implementation team 12.0% – 13.6%

Lab I

OFBiz

- Understand the installation process of OFBiz and its technological platform
- Install the OFBiz
- Understand OFBiz architecture
- Understand customization strategy
- Design your own page/forms with own menu and different frames
- Implement your own design in OFBiz