



PV045

Management informačního systému  
Management of information system

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Leonard Wallezký



# New lecturers



- Ing. Leonard Wallezký, Ph.D.
  - On Faculty of informatics since 2011
  - Master degree – Business Economy (Accounting software in business)
  - Ph.D. – Economics of Information
- Focus of research
  - Implementation of information systems (with the focus to ERP systems)
  - Service Science and its IT application
  - Smart Cities and Communities



# New lecturers



- Mgr. Radek Foltýn
  - Master degree – SSME (Faculty of informatics)
  - Topic: Deployment of ERP system
  - Business experience:
    - ERP consultant – Helios
    - Private consultant



# Focus of the course

- ▶ Not general management of information systems
- ▶ Course is now focused to ERP systems
- ▶ Why?
  - ▶ There are many courses focused to IS (PV043, PV028) and management of them
  - ▶ There is no course that shows the structure, meaning and importance of ERP systems to the company
  - ▶ It is necessary to understand the complexity of ERP system from the point of view of customer, implementing company and developer



# New structure of the course

- ▶ Course contains two blocks:
  - ▶ 4 lectures
    - ▶ Necessary theory and knowledge presentation
  - ▶ 8 seminars
    - ▶ Practical work on your implementation of ERP system
- ▶ Why?
  - ▶ New aim of the course
  - ▶ To teach you practically basic consequences of architecture of ERP systems



# New evaluation

- Two parts of evaluation
- Project – practical example of your own customization or development in ERP system (70%)
  - Only part if you have just colloquium
- Test from theoretical background (30%)




# What you will learn?

## The structure of the course

- ▶ Lectures
  - ▶ The basic introduction
  - ▶ Basic types of information systems and their value for the company
  - ▶ Role of information system in company
  - ▶ ERP system and its architecture




# Structure of the seminars

- The basic modules of ERP system
  - The customization of ERP system
  - Development in ERP system
  - Installation and initial configuration of ERP system
  - Why so brief?
  - We do not want to scare you!!!
  - What might be scary on this?
- 





# Possibly scary facts

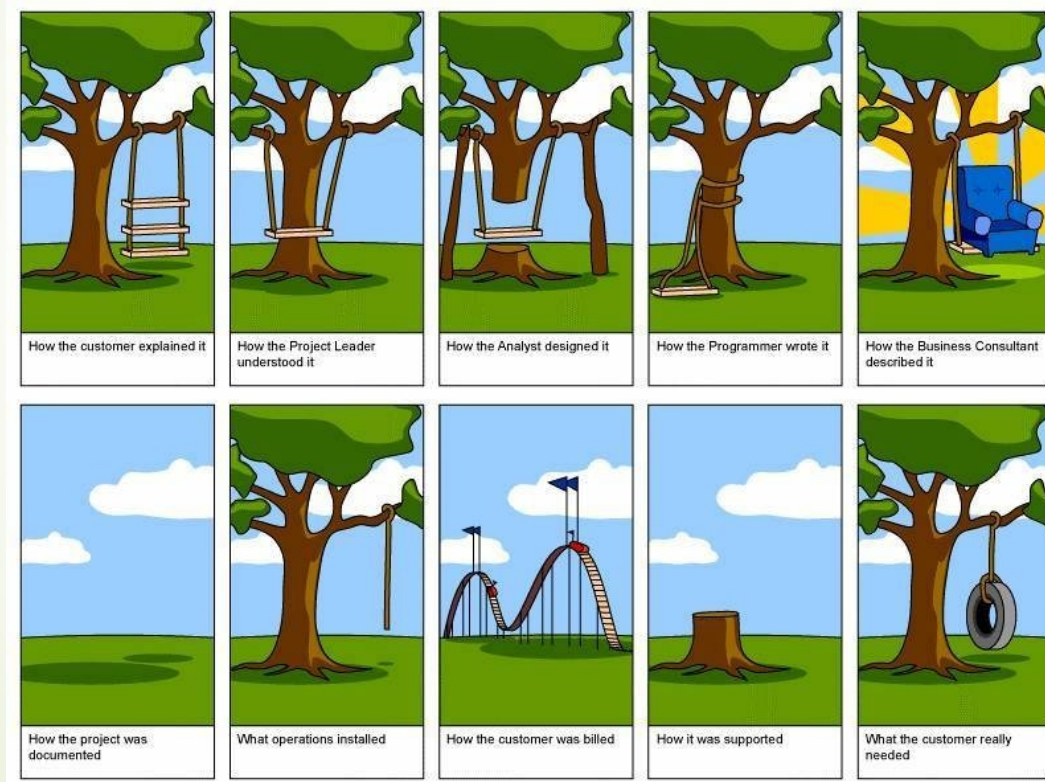
- We will work with economic relations and examples
  - Are you familiar with the topics like:
    - Invoicing
    - Stock management
    - Bank and cash management
    - VAT
    - Financial reporting
  - NO?
    - DO NOT BE AFFRAID!
- 



# Why not to be scared?


- ▶ We will explain you the necessary principles
- ▶ We do not want you to be economics experts
- ▶ But you need to understand the problem on other side
  - ▶ You will probably act on side of developer
  - ▶ You need to understand why it needs to be done exactly in this way
    - ▶ Although other (maybe shorter and more direct) could seems to be better

# Because how does it look like very often?






Questions to  
introduction?



# Basic enterprise information systems

- CRM - Customer Relationship Management
- FMS – Financial Management System
- SCM - Supply Chain Management
- MRP – Manufacturing Resource Planning
- HRM – Human Resources Management
- PMS – Project Management System
- MIS - Management Information System
- CMS - Content Management System
- KMS - Knowledge Management System




# CRM - Customer Relationship Management

- Contains all information about ALL entities we are in business with
- Customer are only one, but the most important group
  - Vendors
  - Suppliers
  - Business partners
- We record every single activity with every entity (order, invoice, payment, phone call, contracts)
- We collect all the contact information in one place



# CRM is important to


- Knowing the contact data
  - Analysing the history of relation
    - Offers to be sent
    - Realized business cases
    - Payments (in time, how much)
    - Reported problems or issues
  - Having marketing information
    - Behaviour on the e-shop
    - Lifestyle preferences
- 



# FMS - Financial Management System


- Is used to drive the finance of the company
- What is our current cash status?
- Can we pay our costs?
- Will we have the money to pay our employees?
- What is our planned income / outcome?
- What is our revenue structure?
- Are we able to realize this business?





# Why are finance so important?

- Money are the blood of the company?
- If company have no money, it bankrupts.
- FMS helps to see the complex situation.
  - If we have a money and if we will have a money
- Cash-flow / Profit problem
  - Company can have a big profit, but no money
  - Profit is realized when invoice is released
  - Cash flow is positive when money are received



# SCM - Supply Chain Management

- To support the business with suppliers
- The company can be just „a link in the long string“
- We need to:
  - Be able to offer particular components
  - To manage their delivery
  - To minimize the costs of the stock
  - To know if we get exactly what we want and nothing less or more
- And the same to our customers and collaborators



# HRM - Human Resources Management

- To manage the most important part of the company
- The system of the wages
  - Fixed part
  - Variable part – depending on the performance of person, unit, department or company
  - Holidays, Evidence of shifts, working hours etc.
  - Taxation, Social and Health insurance
- Evidence of the new positions, current structure etc.



# MIS - Management Information System

- Used to generate reports
- Combining data from many different systems
- Do we have enough business cases?
  - For next week?
  - For next month?
- What is average profitability?
- Can we invest into new equipment?
- Do we need to improve some part of our performance?




# KMS - Knowledge Management System

- ▶ We need to take care not only to our employees but also about their knowledge and competencies
- ▶ Why?
  - ▶ What company do if the key developer(s) leave(s)?
  - ▶ The main competitive advantage is in minds of your people!
- ▶ It need to stored
  - ▶ Internal Wiki or other systems



# MRP – Manufacturing Resource Planning

- Necessary for any tangible production
  - The process of manufacturing must be
    - Planned
    - Controlled
    - Evaluated (do we have any issues, problems?)
  - All the supplements needs to be ready in time
    - Cooperation with SCM
  - We need what to produce and when
- 



# PMS – Project Management System

- To support any project development
- Based on standards of Project Management
- We have many tools (MS Project, JIRA....)
- The project needs to be managed not independently, but as the part of the project portfolio of the company
- Project has its consequences to company health
- Ignoring those consequences leads to serious problems




# CMS - Content Management System

- It really can be a part of the internal system!
- Intranet – only for the employees
- It can be also related with economical activities of the company
- E-shop needs to share or use the same data
- Managing directly the web pages of the company





# What is ERP

- **Enterprise Resource Planning**, integrated system that help business to manage internal and external resources.
  - Built on a centralized database and normally utilizing a common computing platform,
  - ERP systems consolidate all business operations into a uniform and enterprise-wide system environment
  - ERP can integrates all systems mentioned before
- 

# Example of the structure of ERP



# History of information systems

Timeline	System	Description
1960s	Inventory Management & Control	The activities include identifying inventory requirements, setting targets, providing replenishment techniques and options, monitoring item usages, reconciling the inventory balances, and reporting inventory status.
1970s	Material Requirement Planning (MRP)	MRP generates schedules for the operations and raw material purchases based on the production requirements of finished goods, the structure of the production system, the current inventories levels and the lot sizing procedure for each operation.
1980s	Manufacturing Requirements Planning (MRP II)	Manufacturing Requirements Planning or MRP utilizes software applications for coordinating manufacturing processes, from product planning, parts purchasing, inventory control to product distribution.
1990s	Enterprise Resource Planning (ERP)	ERP systems often integrates business activities across functional departments, from product planning, parts purchasing, inventory control, product distribution, fulfillment, to order tracking. ERP software systems may include application modules for supporting marketing, finance, accounting and human resources.
2000s	ERP as a Service	ERP system is provided for the customers portfolio, optimized and configured for every particular customer, but using one general platform

# Providing ERP

Inventory, MRP,  
Production, Project,  
Accounting, CRM,  
HRM, etc.

ERP


ERP as a  
Service

1960

1990

2000






# Why do we need such a complex system?

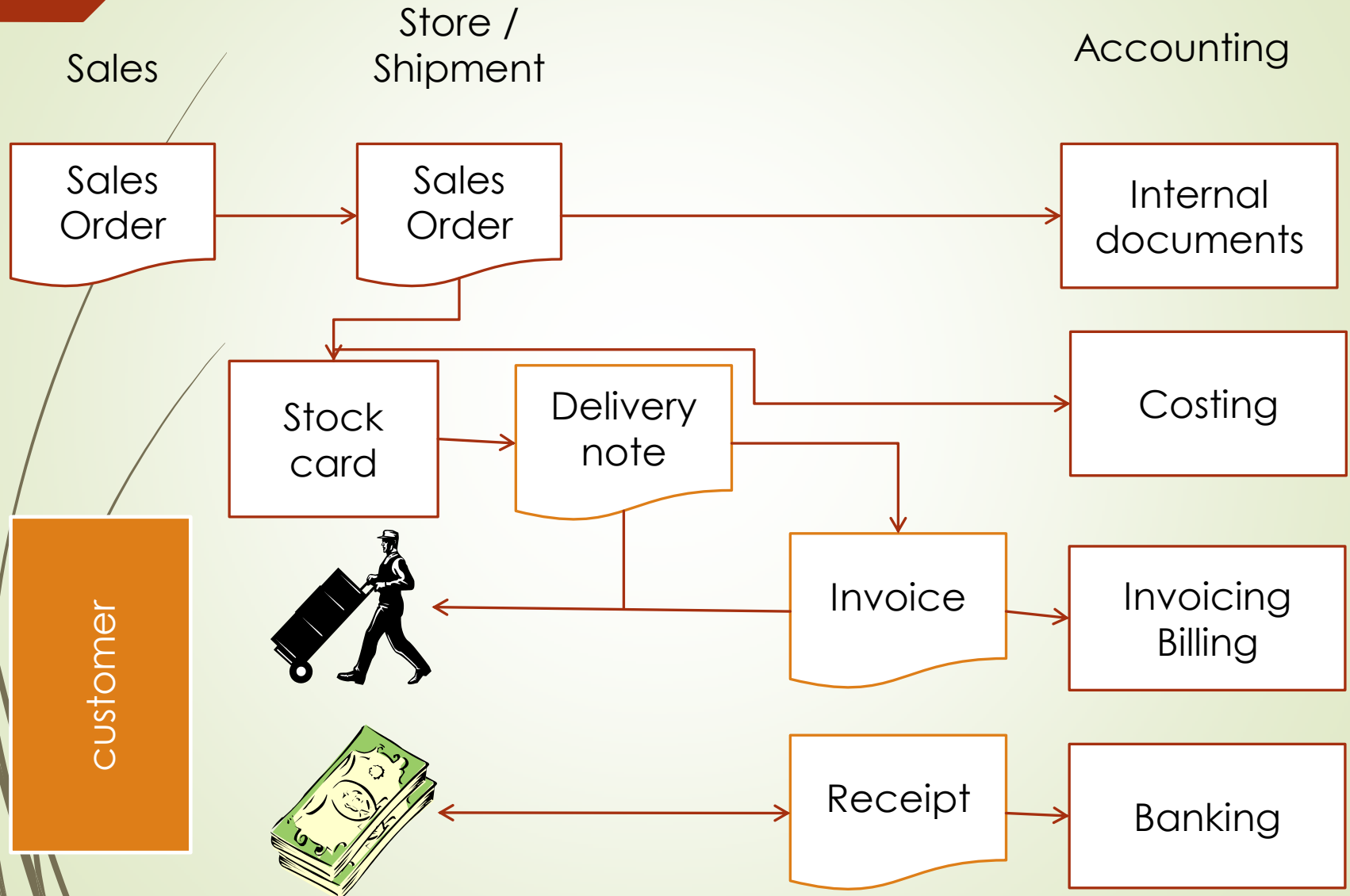
- ▶ Could we use just specialized systems for each activity?
- ▶ Do we need such a robust solution when it is:
  - ▶ Tough for maintenance
  - ▶ Hard to learn (so many functions)
  - ▶ We do not need to have all the functions?



# Example

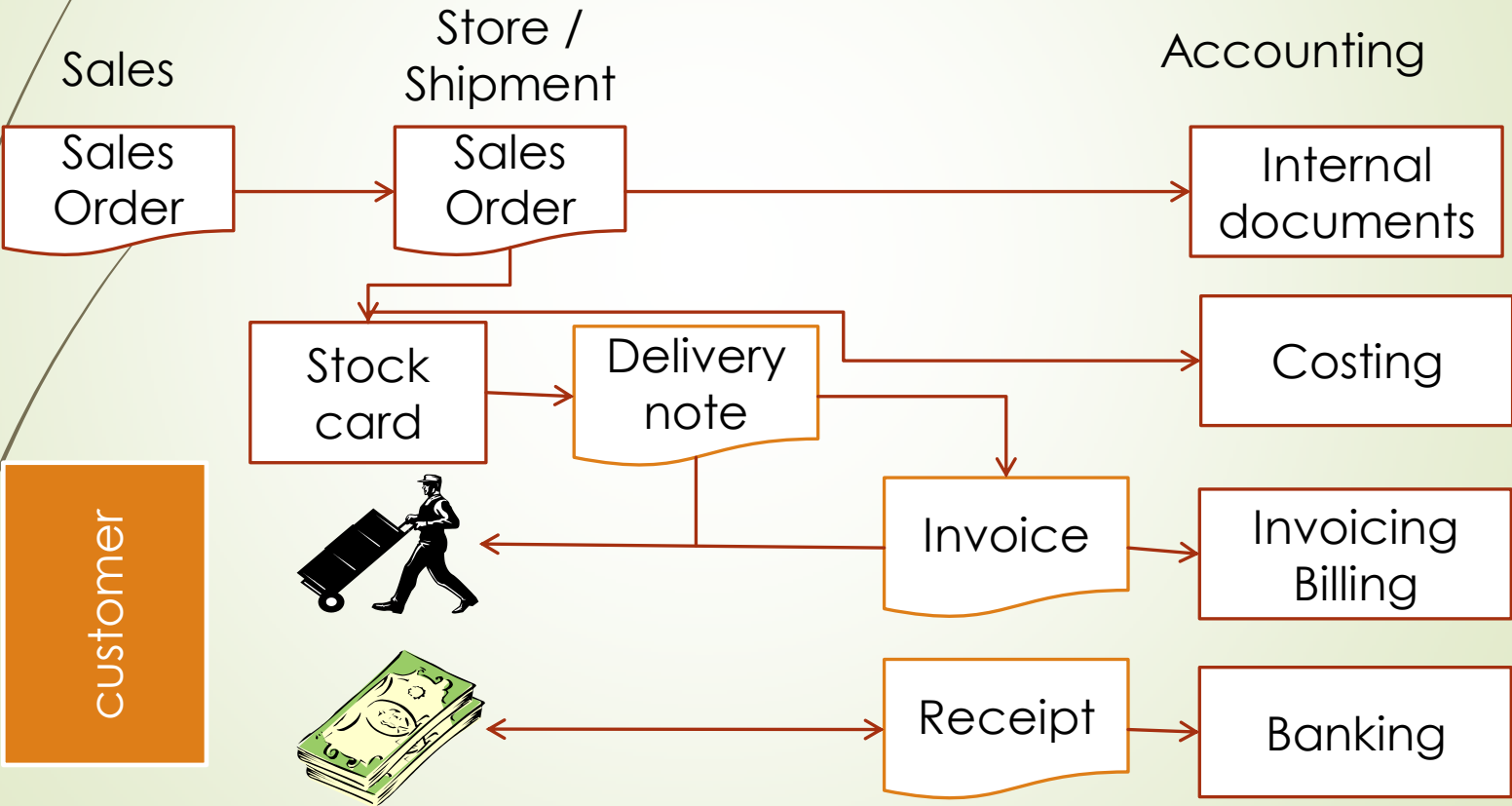
- The most common example
  - The customer ordered particular good (mobile, dress, TV) and wants to deliver it to his house. Payment is realized after delivery.
  - What does it mean for the business processes and their management?
- 

# Example



# Example

ERP







# Conclusion



- ▶ Every (even) small economic activity produce a lot of documents
- ▶ Problems
  - ▶ Managing all the documents together with their relations (metadata)
  - ▶ Consistency of the documents
  - ▶ Part of them is basis for the taxations
- ▶ We do not need to store data only
- ▶ We need them back!
  - ▶ Analysed, compressed, providing information about our business



Questions?