

# ENTERPRISE INFORMATION SYSTEMS

- Information society
- Introduction to information systems
- The Learning Organisation
- Historical stages of IS development

# Information society

## Literature:

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# Information society

There is no doubt about the role of ICT in the company and the issue is only when the given company makes its figurative entry into the development phase known as the information society. A clear historic milestone, which is usually characteristic of the end and beginning of other important epochs in the history of mankind, does not exist here. One of the potential aspects may be the share of the company's production created in connection with the application of new technologies. In the information society, the share of GDP created in connection with the ICT increases and gradually becomes dominant. This historically results in a shift from primary use of the initially agricultural and subsequently industrial resources toward information resources. This shift was already registered by the sociologists and economists from the 1950s in the advanced industrial societies although the explanation many a time remained within the traditional industrial concept and the society was termed post-industrial on the basis of these changes (Basi, 2008)

# Information society

“We are living in an information society, whereas this expression contains an extensive complex of quantitatively and qualitatively new phenomena. From the general viewpoint, every new change, which is undoubtedly the case of the shift to the information society, is usually clarified, categorised or identified by comparison with the current state. This is, among other things, the reason why some authors sometimes use the more technological term “third industrial revolution” for the era of the information society (Basl, 2008)

# Information society

The information society, which is recently a very hot topic and that is contended as the society that we are living in at present, can be characterised summarily also in terms of the fact that the procedures used to earn profit in its environment are based on intensive and intelligent utilisation of information, which expresses the essence of the economic perception of the information society (Šlapák, 2003)

# Information society

A society whose sources of economic productivity, cultural hegemony and political and military power depends on the capabilities to obtain, collect, store, analyse and create information and knowledge is designated as an information society. Information and knowledge were an important factor of economic accumulation and political power also in the past, but in the current technological, social and cultural context, information is directly becoming a production force. Due to the information interlinking of the entire world and the automation of the majority of the standard routine manufacturing and management tasks, control of information, knowledge and information technologies is an essential condition for influencing the organisation and functioning of society to the benefit of the holders of information and information technologies (Castels, 1993).

# The information society - Summary

- Globalisation trends
- Role of ICT in the world economy - 10% of GDP, it employs 7 million people in the ECD
- The position of ICT in supranational corporations
- The third industrial revolution
- Changes that ICT brings into the enterprises - changes in the forms of business, new decision-making requirements

# The Learning Organisation

Features of the learning organisation:

- Application of systemic thinking in the organisation
- Achievement of personal mastery
- Analysis and achievement of changes in the established models of thinking
- Creation and sharing of the vision
- Teamwork is focused on dialogue between the team members and suppression of the ambitions of individuals to the benefit of common thinking about problems.



# Introduction to information systems

What do you think of the term "information system"?

# Data and information

- **Data** - factual expression of the real world
- **Information** - the result of the interpretation of data  
*Information* means data that has designated significance.
- **Knowledge** - generalisation of the recognition of certain part of reality.
- *Knowledge* = information + premises + experience

# Information

- The information brings something new to the user - it reduces the entropy of the world
- The value of the information unit – bit (Binary digit) is 0 and 1

Information:

Syntactic viewpoint - internal structure of the information, relationship of the characteristics

Semantic viewpoint - overall content of the information

Pragmatic viewpoint - practical application of the information

Information as the main enterprise resource

# System

When we talk about information systems, we also encounter the term “system”.

*What is a system?*

# System

It is a purposely arranged set of elements and their mutual links with dynamic and purposeful behaviour

# System

We define the system by means of:

- elements
- links between elements
- parameters (evaluation of links and elements)
- purpose functions (=reasons for existence of the system)
- target functions (=the state that we want to achieve)

# System structure and behaviour

- Certain behaviour matches a certain system structure, **but** certain behaviour is matched by a class of structures, which is defined by such behaviour.
- *Analysis* is a clear task where it is necessary to determine its behaviour based on a known system structure.
- *Synthesis* is an ambiguous task where a corresponding system structure is sought on the basis of required behaviour to ensure such behaviour.

*What is an “information system”?*



# Information system

- Information system - definition **An information system** (IS) is a system for collection, transmission, maintenance, processing and provision of information.
- **Information system** = set of people, technical means and methods that facilitate the collection, transfer, storage and processing of data for the purpose of creation and presentation of information for users who are involved in the management process

# Information System

- The information system is the targeted form of application of information technologies in the socio-economic systems.
- Information technology (IT) means all equipment used for processing of information.

# Perception of the “information system”

Statement from operating practice:

“We did not have an information system in our enterprise for thirty years and we managed to function. So we do not need any information system.”

*Why is this statement inaccurate?*

*Did they really not have an information system?*

The information system need not be automated by means of  
computers

# Enterprise information system

They are created by people who use the available technological resources and defined methodologies to process the enterprise data and create the information and knowledge base of the organisation for management of entrepreneurial processes, management decision-making and administration of the enterprise agenda (Sodomka 2010)

# Corporate information system

The EIS should be an integrating platform that merges entrepreneurial processes, information flows and communication outside and within the organisation. Its integration role within the chain is then the basic assumption for generation of values in the network structure

The EIS should fulfil the role of the carrier of standardisation, which positively affects processing of standard enterprise agenda within the framework of the enterprise processes, behaviour of the users and changes in their working habits.

The EIS should provide a general overview of the functioning of the organisation and ensure the processing of information for managerial decision-making

# EIS - process management support

The process is a set of mutually related or interacting activities transforming inputs into outputs.

We break the processes down as follows:

Management - strategic planning, quality management

Major processes - manufacturing, logistics, customer relationship management

Support processes - economics, human resources management, IT

Internal processes - for management control

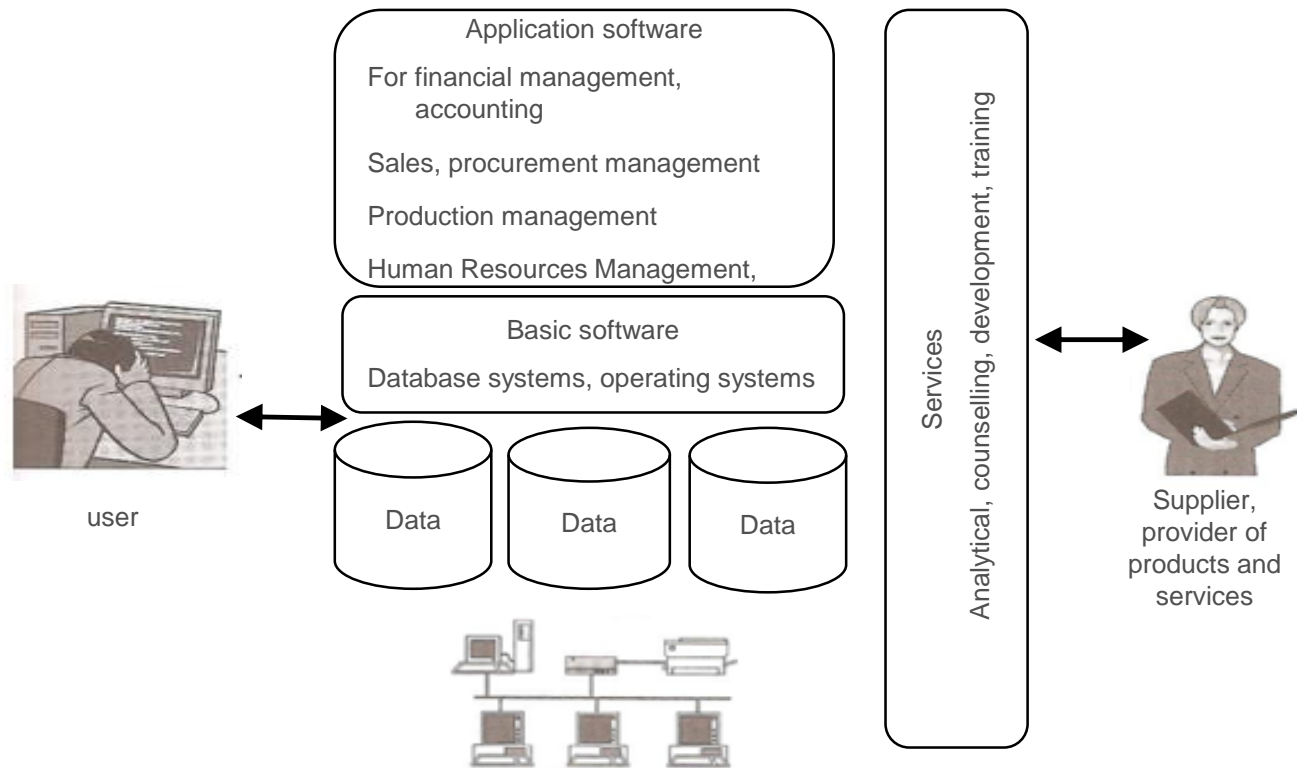
External processes - the owner is not precisely defined

# Information system components

- Software
- Hardware
- Database
- Human component (peopleware)
- Organisational structure (orgware)
- Information system context



# Corporate information system



Source: Gála 2009, p. 123

*What are the IS requirements?*

*What information does the IS provide?*

# Information system requirements

- Reliability
- Effective operability (in relation to the costs)
- Flexibility (development capability)
- Maintainability
- Security

# Information provided

- Periodical reports
- Ad-hoc (on-line) queries
- Requirements for the provided information:
  - Timely (current)
  - Relevant (corresponding to the needs)
  - Precise (error-free and without risk of erroneous interpretation)
  - Verifiable (control mechanisms)

In connection with the information systems, we can encounter the term 'IS effectiveness'.

What is effectiveness?

# Effectiveness

- Effectiveness - efficiency of resources invested into an activity, assessed in terms of the useful outcome of this activity.
- Optimum - balance between cost and benefit.

# IS in the enterprise

- Four categories of people with varying expectations work with the IS:
  - Owners
  - Managers
  - Employees
  - Customers
- What are the expectations of the individual groups?