Tecnologias de Informação

School Year 2020/2021

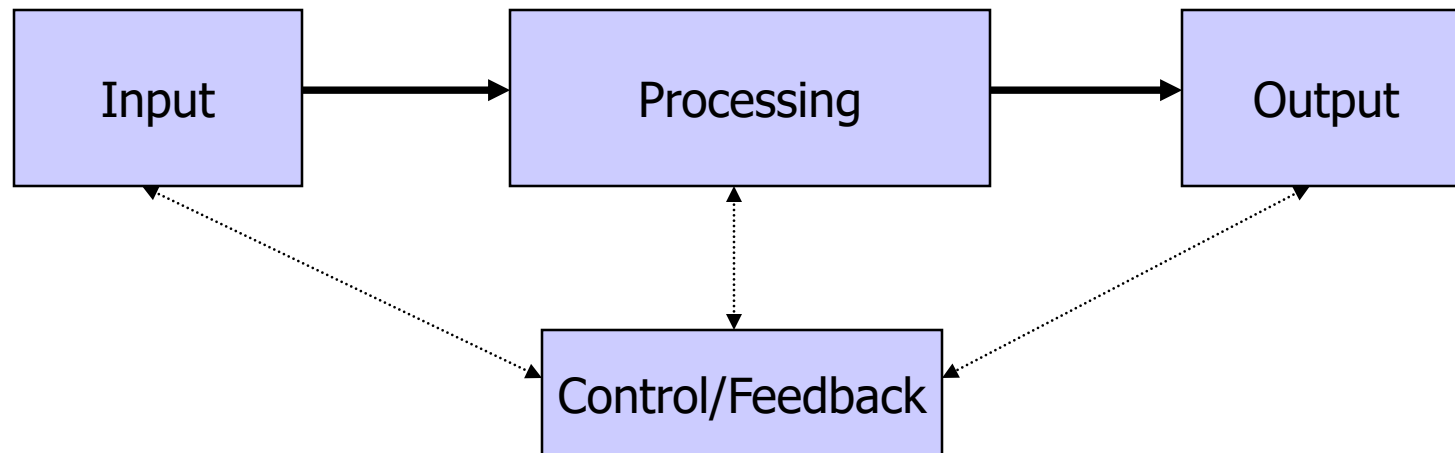# System, Information System, Automated Information System

Basic concepts and definitions

System

- It is a set of components related to each other, acting in a given environment, with the purpose of achieving common goals with self-control capacity

- Any system consists of Inputs, Processing, Outputs and a Control / Feedback Mechanism
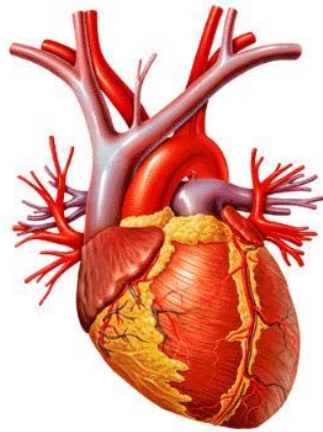
Examples of Systems
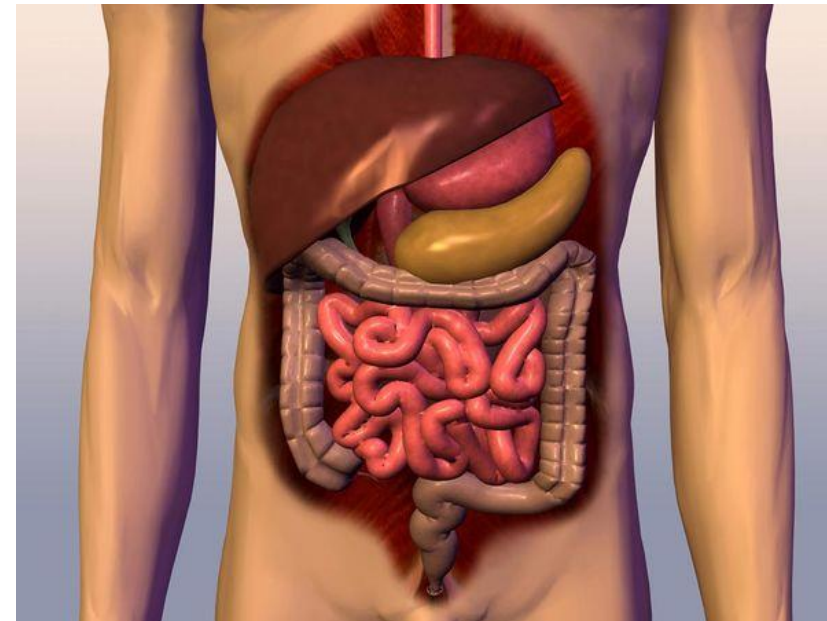

Human beeing

circulatory system

Computer

Car

General Characteristics of Systems

All systems are incorporated into other systems (meta-systems) and can always be divided into smaller systems (subsystems)

Information System (IS)

- Like any other System, an Information System is composed of **inputs** (data, instructions) and **outputs** (reports, calculations). The IS **processes** inputs and produces outputs that are made available to the end user or other systems.

- A **feedback** mechanism that controls the operation is also usually included.

- Like any other System, an IS operates in a given **environment**.

Adaptado de Turban, E.; McLean, E.; Wetherbe, J. (1999). *Information Technology for Management – Making Connections for Strategic Advantage*, 2ª edição, John Wiley, New York.

Information Systems (IS)
What for?

- **Information systems** are implemented within an organization for the purpose of **improving the effectiveness and efficiency of that organization**.

- Capabilities of the information system and characteristics of the organization, its work systems, its people, and its development and implementation methodologies, together determine the extent to which that purpose is achieved.

Silver, M. S., Markus, M. L. e Beath, C. M. (1995). The Information Technology Interaction Model: A Foundation for the MBA Core Course, *MIS Quarterly, 19* (3), pp. 361-390.
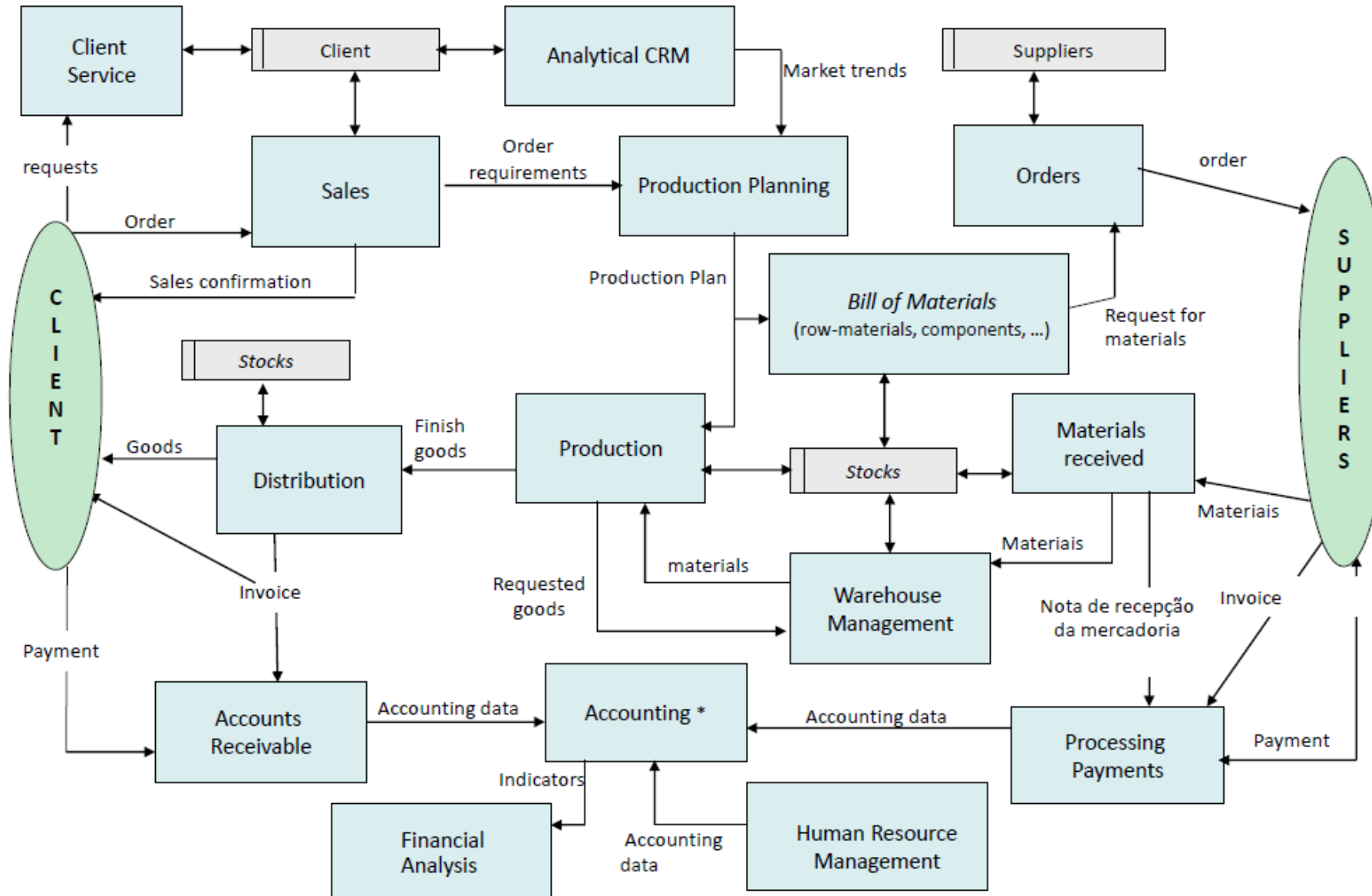
Organizational Information Systems (OIS) (1/4)

- An **Organizational Information System** (OIS) is a socio-technical system composed of people, procedures, data / information and ICT components (hardware, software and communications), which collects, processes, stores, analyzes and distributes information to support Operations and Decision Making

- An OIS should allow the coordination and integration of the organization's business processes

Integration of the organization's business processes

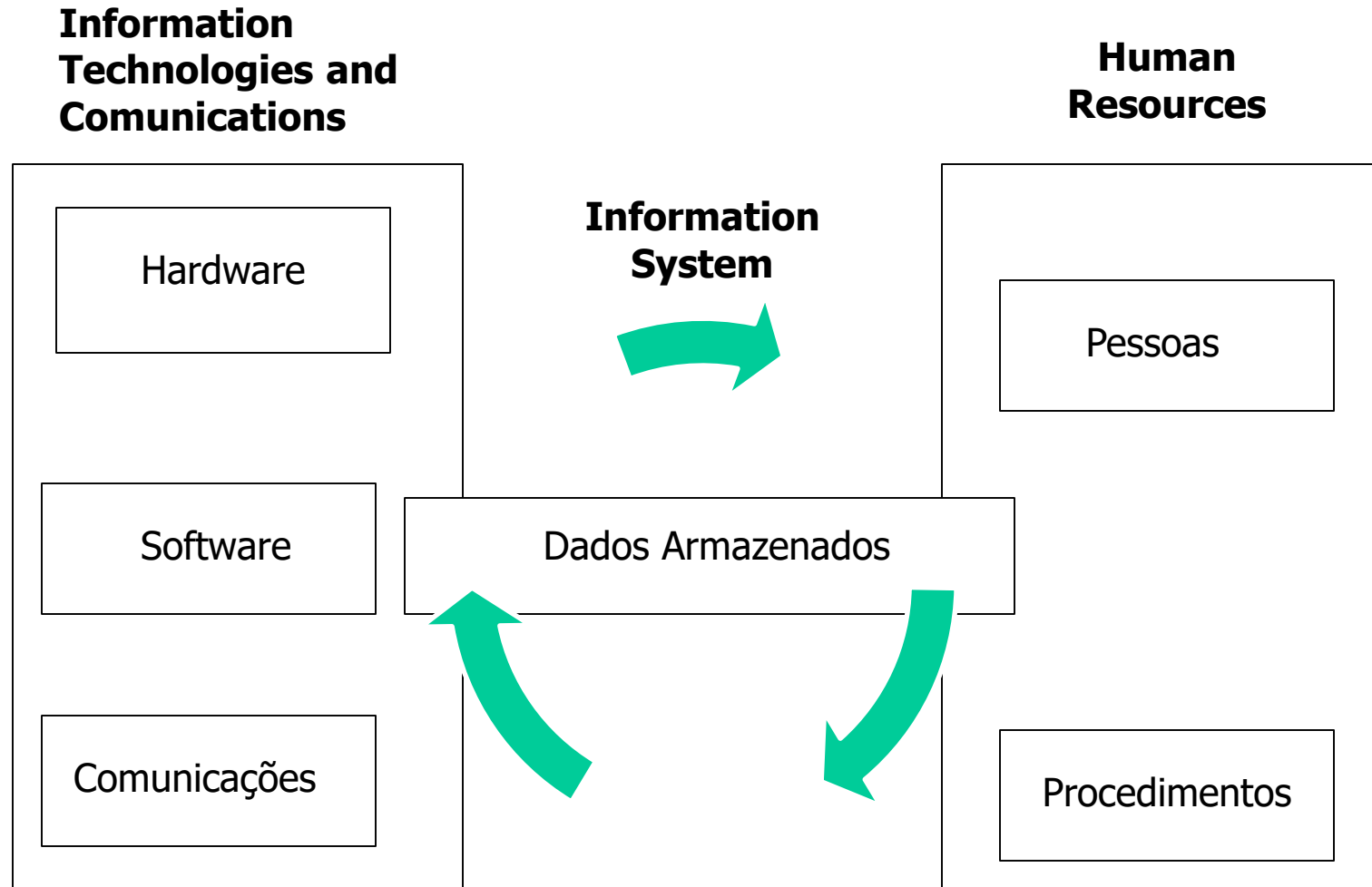# Organizational Information Systems (3/4)
Objectives

The Objective of an Organizational Information System is to provide information to support:

1. Operations - Activities carried out within the scope of an organization's

value chain with the purpose of creating value for its stakeholders

2. Decision Support Activities at operational, tactic and strategic levels

Adaptado de Robert Nickerson (2009)
http://online.sfsu.edu/~rnick/mannheim/lecturerev.pdf

Organizational Information Systems (4/4) Components

Information Technologies and Comunications

Human Resources

Information System

Hardware

Software

Comunicações

Dados Armazenados

Pessoas

Procedimentos

Adaptado de Robert Nickerson (2009)
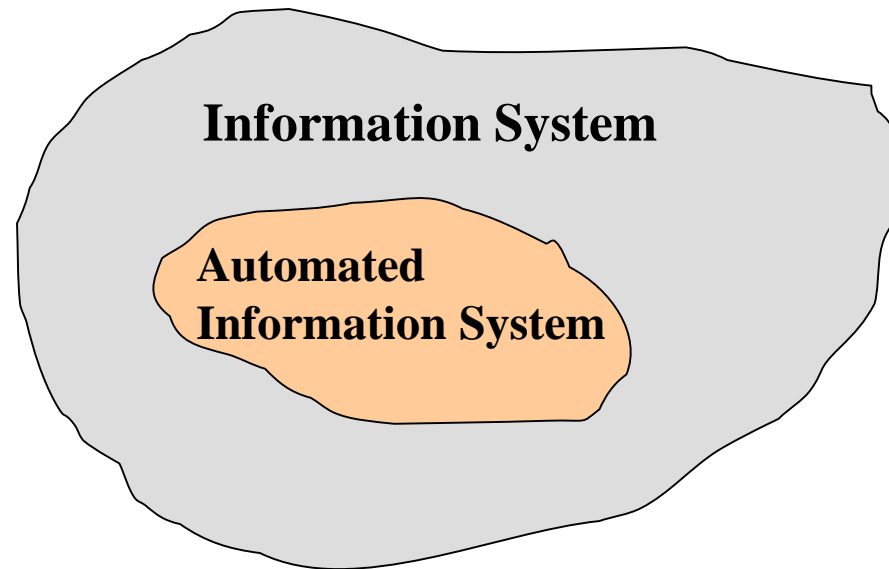http://online.sfsu.edu/~rnick/mannheim/lecturerev.pdf

Automated Information System (1/2)

An **Automated Information System** (Sistema Informático) is the part of the information system that is executed using Information and Communication Technologies.

As Information Systems are currently computerized, the designation "Information System" is often used, wrongly, with the same meaning as "Automated Information System".

Automated Information System (2/2)

Information System

Automated
Information System

Contributors

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