

Let us remember that by organization of a company we mean the methods of defining the actions to be taken to carry out the production processes within a company, their distribution at the different levels of the company structure and their coordination for the best use of resources.

To identify the role of information within the company, let us briefly summarize what has already been introduced regarding the resources and processes of a company.

## RESOURCES

A resource, whether material or immaterial, is everything with which the company operates to pursue its objectives.

A simple classification of resources is the following:

1) external resources:

- social and economic environment;
- market;
- customers;

2) internal resources:

- exchange resources: products (goods or services);
- structural resources: finances, people, infrastructure;
- management resources: rules, organizational charts, delegations, plans, information

Within the organization, resources assume different “states” within what is called the resource life cycle, which can be summarized in four phases:

Planning → Acquisition → Management → Maintenance

For example, let's apply the four phases of the life cycle to the personal resource: in the planning phase (phase 1) the need to hire new staff for a specific activity or need is defined and identified (planning); then we continue with hiring (acquisition - phase 2) and training, inserting them into the organization (management - phase 3); over time, staff are given refresher and specialization courses in order to maximize their functionality (maintenance - phase 4).

## PROCESS

A process is understood to be the set of interrelated activities that the organization as a whole carries out to manage the life cycle of a resource or a homogeneous group of resources.

Processes follow the life cycle like resources.

Let's take the example of personnel again: for the personal resource the following processes can be defined:

planning:

- of the workforce;
- of the assignment of people to activities;
- of training and education; acquisition: selection, hiring, initial training;

management: assignment of activities, evaluation, promotions and rotations, salary adjustments; professional updating.

In order to operate, processes require knowledge of the resource or resources on which they act: in other words, they need information, which also constitutes a company resource, a very important resource (if not the most important!)

The information system is a fundamental component of every organization: it is the set of processes that manage the information resource. Every organization, for its functioning, must have accurate information and must also be able to process it promptly. Since this aspect is of great importance, the information resource is isolated from other resources and treated with particular attention through the company information system.

## INFORMATION SYSTEM (1)

An information system is a combination of resources, human and material, and organized procedures for the collection, storage, processing and exchange of information necessary for operational activities (service information), management activities (management information) and planning, control and evaluation activities

The term system highlights the fact that there is an organized set of elements of different nature, which interact in a coordinated way, while the adjective informative specifies that all this is aimed at managing information and therefore the interactions that we are interested in highlighting are those due to exchanges of information (information flows).

A second formulation of the definition of information system is the following.

## INFORMATION SYSTEM (2)

A set of people, resources, machines, software and procedures that collect, process and exchange data in order to produce and distribute information to support decision-making activities and company control.

For example, a corporate information system (SIA) is responsible for managing information related to:

- 1) accounting;
- 2) warehouse;
- 3) marketing;
- 4) e-mail;
- 5) customer management.

An institutional information system (SII), on the other hand, is responsible for managing information related to:

- 1) registry office;
- 2) town planning;
- 3) wages;
- 4) electoral system;
- 5) taxes and fines;
- 6) customers.

In reality, even in everyday life we can identify a personal information system to manage the following information:

- 1) phone book;
- 2) e-mail;
- 3) family budget;
- 4) Internet;
- 5) radio and television;
- 6) books and encyclopedias.

An organization's information must first be interpreted and transformed into data so that it can be processed automatically with electronic computers.

The reduction in the cost of information technology has made this possibility widely available, making procedures more accurate and rapid and enhancing the methods of processing information

The term automated information system or computer system refers to that part of the

information system that is created with computer technologies: information is collected, processed, archived, exchanged through the use of information and communication technologies.

The computerized portion of the information system is called the computer system, that is, the set of software applications and hardware tools that manage data and information flows.

The computer system, in detail, is responsible for:

- 1) collecting
- 2) processing
- 3) archiving
- 4) communicating

information through the use of information communication technologies (ICT).

In companies, before the introduction of office machines and electronic computers, information was managed with manual methods.

Complex and lengthy procedures were thus established aimed at:

- 1) recording and managing data on paper;
- 2) archiving documents;
- 3) searching in filing cabinets.

The high error rate due to the succession of manual and transcription activities forced the introduction of information control cycles, thus causing the low efficiency of the system. Let us briefly retrace the historical evolution of computer systems, focusing on the fundamental aspects of each "era of computerization".

The 1960s: the most pressing need was to have suitable tools to improve the efficiency and productivity of some parts of the operational processes.

This led to a spread of computer technology for sectoral applications, especially in administration, with the aim of automating those activities that require the systematic and repetitive processing of large amounts of data (invoices, payroll and accounting).

The set of these applications was called "data processing system", in Anglo-Saxon literature EDP System (Electronic Data Processing System).

The advantages of this system mainly concerned the correctness of the results, the reduction of costs and the greater productivity of the sector.

The disadvantages concerned:

the poor integration of data common to the different sectors, with duplications of data and the associated risk of inconsistent copies the limited possibility of correlating sector data to generate information of global interest for the organization.

1970s: the progress of technology made available new IT tools that, by promoting integrated data management, concerned every level of the organizations (database): the data processed automatically were not divided by sector interests, but were processed globally, so that each piece of information, although represented only once, could be used for different activities of the information system.

We have therefore moved from sectoral IT systems to IT systems for the organization, with significant implications on the structure of the organization itself, since a rational use of IT technology necessarily involves a review of the functioning of the organizational structure that must use it. The set of these applications has been called "system for the production of information for management control", in the Anglo-Saxon literature MIS (Management Information System).

1980s: the increase in the processing speed of computers, the progress of traditional magnetic memories and the affirmation of optical memories have allowed the storage and processing of information in the various forms that it can take (data, text, sound, document, drawing, image, etc.) further broadening the spectrum of possible applications of this technology. Furthermore, IT systems have been used to support strategic activities: these are systems that assist non-predefined and poorly structured management activities and have been called "systems for decision support", in the Anglo-Saxon literature DSS (Decision Support System).

2000s: The present (and the future) must take into account the political and social innovations that increase the importance of information systems: globalization (expanded competition, very large-scale markets); transformation of businesses (decentralization, flexibility, collaborative work); transformation of the economy (timeliness of decisions, rapid obsolescence of products, large amounts of available data).

A new generation of software solutions has thus evolved, the so-called "ERP" (Enterprise Resource Planning) solutions, which in fact propose an integrated management system (i.e. a set of software modules that operate on a single, appropriately designed database) as a partial or complete replacement of previous systems.