# DEVELOPMENT OF INFORMATION SYSTEMS IN THE INFORMATION SOCIETY

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***Abstract:***
*In the new society we all live in, new types of resources have become a priority, namely information and knowledge and tangible products have been replaced by intangible ones. Thus, in the information society, any modern organization cannot perform without enjoying real-time, correct and coherent information all together. This task is part of the information system which is responsible with processing, transmitting, memorizing and providing information. Therefore, in order for an organization to cope with a competitive environment affected by the economic crisis, it should integrate modern information technologies into its business.*

***Key words:*** *information, information technologies, new society, information systems' integration*

***JEL classification:*** *C80, C88*

## Introduction

Information society focuses on another resource type that has become strategic to the new society, namely on information and knowledge. The new society relies on a different type of products which are tangible products. In the new society, in order to survive in the competitive environment, any modern organization must have real-time, correct and concrete information. Therefore, it is necessary for any activity to use a strong informational support meant to ensure a competitive advantage to an organization in its struggle with other market competitors and to help make the best decisions in the context of economic instability. All these are possible due to the development of Information Technology (IT) which refers to hardware, software, communication networks, data bases, process automation in an organization as well as all the other components related to software, hardware equipment useful during the procedure of information processing.

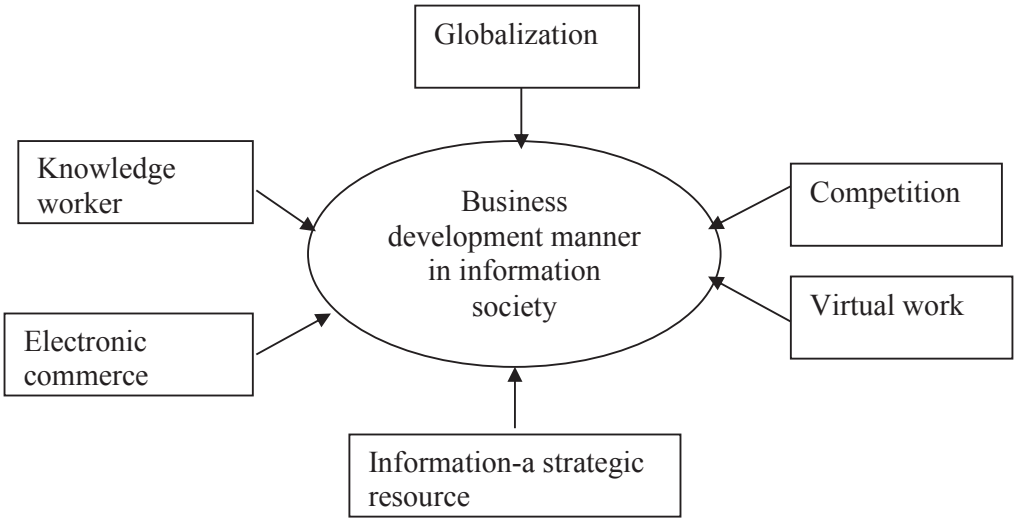
Information Technology makes it possible to receive the information according to which knowledge is attained. At present, IT is no longer regarded from the perspective of ensuring a strong information support in business, but also as a new way of reorganizing business so that it becomes more competitive in the context of economic instability.

Information is "stone" and the same be said about the communication process within an organization, because the information must reach the person / department / sector when appropriate and necessary, and if not then the information loses its value. Performance management of an organization depends in particular knowledge operational and accurate supply and demand of domestic and foreign, the dynamics of prices, trends in technology and the use of company resources [5]

In the information society, there are major changes in business development manner, in any company (Graph 1), some changes that take place as a result of the following factors:

- globalization;

- information as a strategic resource to the new society;
- competitiveness increase;
- growth of electronic commerce;
- presence of a knowledge worker – in a knowledge-based society, people specialized in data processing and analyzing emerge in companies;
- changes in work methods, work emergence in the virtual environment.




*Graph 1: New manner of business development in information society*

In the mid 1950's, applications of *Electronic Data Processing* emerged in the accounting field because it is a field working with a large amount of information. Afterwards, its applicability scope expanded upon the processing of transactions, personnel, manufacturing, marketing etc. The main goal of such applications is the collection of data in the aforesaid fields. These systems are characterized by:

- a large amount of processed data;
- they are mainly used in current activities taking place in an organization's functional departments;
- data processing aided by these systems has a repetitive feature and low complexity.

After data collection, the data are subject to processing with a view to getting necessary information for tactical management in the form of management reports or other types of statements needed by managers, thus adding a new role for information systems. Thus, in the early 1960's, the concept of **Management Information System** or **Management Reporting System** arose. Such systems have the role to provide managers with the information needed while monitoring and controlling business and also for supporting decision making. The systems are characterized by the following:

- they are meant for managers, for tactical management;
- they ensure necessary information to prepare reports or other statements useful to operational management;
- they support decision making and provide information to be used in problem solving.

In the early 1970's, the endeavors of IT specialists were oriented towards relieving decision making as decision makers used to make great efforts and information products up to that time did not properly respond to the multitude of decisional needs of managers. Thus, the concept of **Decision Support System – DSS**

emerged. The main role of these information systems is to synthesize the set of data in reports therefore providing a certain support to decision making. The traits of these systems are:

- DSS assists managers when making the best, most timely decisions;
- Ensuring support to top managers when preparing reports and helps accomplish and develop "what if" analyses and graphs;
- Supporting decisions in fields such as: treasury/finance, strategic planning, marketing.

In the mid 1980's, due to the rapid progress in the field of computers, namely to the power of data processing and the development of software packages, telecommunication networks, the phenomenon called *informatics of end–users emerged.* This is how **Office Automation Systems, and Team and Work Group Collaboration Systems** (***Enterprise Collaboration Systems)*** emerged. The main feature of the new systems is approaching human communication and their presence is felt in all types of information systems.

Another category of information systems that have emerged and developed during the period are **Executive Information Systems** as a consequence of finding out that most top managers did not directly want the reports provided by management information systems nor did they want the analytical modelling facilities of decision-making support. The new systems aim at overcoming the traditional "score board" or reporting systems that many managers could not have the time to read entirely because of the large amount of information which bored them. Top managers, good strategists want to know the market position at national and world level and then details about their own companies. Thus, these information systems respond to all these informal managers.

Furthermore, still during this period, important progress was felt regarding the growth and application of artificial intelligence techniques (AI) to business information systems. Thus, in the mid 1980's, **Expert Support Systems – ESS** emerged, also known as *Knowledge Work Systems (KWS)* which help process human knowledge. The emergence of these systems has been dictated by the following aspects:

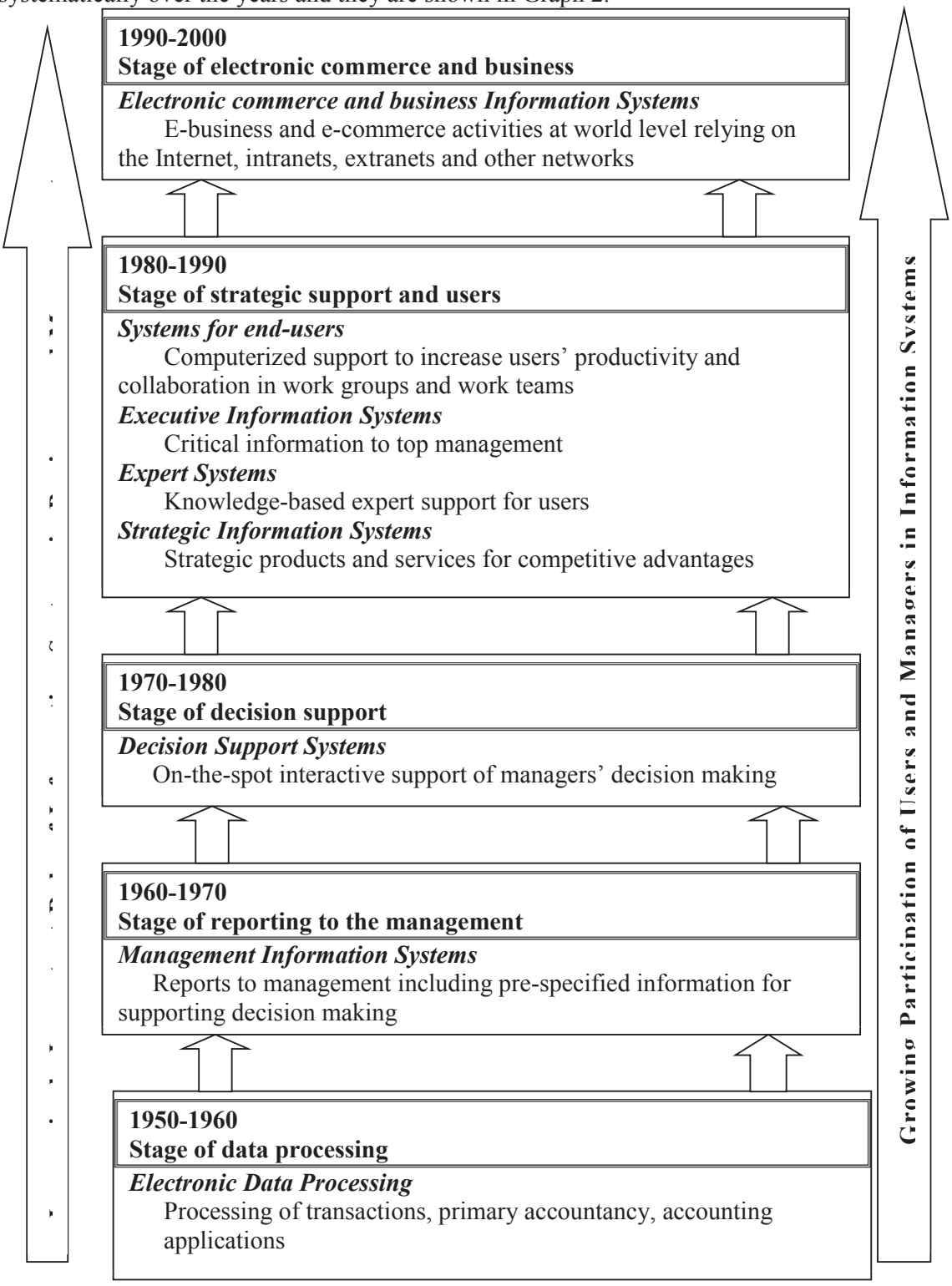
- the difficulty of finding the right solution in the event when issues are involved requiring a large amount of knowledge;
- the difficulty of always having a human expert in various places.

These systems include intelligent software agents that can be programmed and accomplished so as to act according to the needs and requests of users, system functions which automatically comply with users' needs, virtual reality functions, advanced robotics, natural language processing and many other applications where artificial intelligence removes the need for human intervention and relieves personnel work by getting rid of more complex tasks. These systems are much more highly performing than their predecessors and beside their being able to tackle some of the system tasks mentioned above. They also act as consultants to their users by providing them with assistance. Features:

- they are easy to work with and offer an interactive work method;
- they are meant for top managers, executive managers, and analysts in a company;
- they allow for the rapid access to internal and external data bases.

In the 1990's, a new important role of informational systems came into being, that is the strategic one and the respective systems were known as **Strategic Information Systems.** The concept sets forth that information technology is an integral part of business processes, products and services and at the same time it ensures a competitive market advantage to its owners.

The functions of information systems have improved significantly and systematically over the years and they are shown in Graph 2.




*Graph no.2: Role and Role Impact of Information Systems* (after O`Brien J. A. "Management Information Systems", Irwin/McGraw-Hill, 2007, p.11).

In mid 1990's, the systems for Enterprise Resources Planning came into being. An ERP *(Enterprise Resource Planning),* appreciated as the "truest expression of the interdependence between business and information technology means a multi-modular software infrastructure which provides management and coordination support of various structures and processes in a company with a view to achieving business goals"[3]. The main objective of an ERP system is performing better communication in a company, improving cooperation and interaction among departments such as manufacturing planning, acquisitions, manufacturing, sales and customer relations. An ERP system integrates all the sides of an organization performance including planning, production, sales and resources management, customer relations, financial management, order monitoring etc. the main advantage of these ERP systems is the presence of a common interface to all computerized organizational functions.

Eventually, the fast growth of the Internet, intranets, extranets and other global interconnected networks after the 1990's cause the dramatic change of chances of business information systems in the beginning of the new millennium. Thus, the **organizations prepared for the Web** whose performance heavily relies on the Internet along with **global systems for electronic commerce and business** have become the common denominator of current enterprise operations and management [2].

**Conclusions**

In the end, it can be stated that overall current information systems meet the same basic functions as they used to do 50 years ago whereas users have expanded their abilities related to the use of information technology in order to manage organizational performance. At present, too, transactions should be processed, records should be kept, reports should be provided to managers etc. The main change occurring over time envisages a much higher level of integrating the system functions among various applications, much higher connectivity of components of the same type or of different types.

In the future, information systems shall be oriented to increasing the speed and scope in order to ensure better integration and complexity.

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