

Automated Economic Data Processing In The Changing Business World

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Abstract: *An attempt is made for exploring some strands of the automated economic data processing in the changing business world. The new realities in business management and automated economic data processing are outlined. Some strands for intellectual support in making business management decisions are revealed. Interesting are the challenges of e-business to automated economic data processing as well.*

Key words: *Data Processing, Information Technology, Business Intelligence, Knowledge Management, E-Business, M-Business.*

“Information technology gives you an access to the data, which allows you to enter into the essence of your business. It provides business problems decisions, which simply have not existed till now. Information technology becomes more and more inevitably interrelated.”

Bill Gates*

INTRODUCTION

The millenary human history is connected with milestones, which trace the road of technical tools development which rationalize intellectual human activities. It has been a hard way entailed human destinies, creative researches and practical attempts.

Today, on the 100 anniversary of John Atanasov, one of the pioneers and inventors of the contemporary computer systems and technology and about half a century of their mass dissemination in human practice and mostly in business are serious reasons for a balance, giving a new meaning and outlining new challenges.

Automated economic data processing systems are the most popular form with the greatest experience and traditions concerning computer systems and technologies applications in the business practice.

Both in the developed economies and the countries in transition to market economy there are almost no enterprises or firms which doesn't use automation data processing systems in one or another form.

At the beginning of the new century the business management is faced with many trials, which could be systematized in two basic directions:

First, the development of the world economy as a whole and the status of the different country's and regions' economies are connected with processes of progress, recession and stagnation, and they influence IT industry development and respectively the investments for building and modernization of their information infrastructure.

Second, there are evolutionary processes, especially in the developed economies, that outline step by step transition from industrial development model to economies based on information and knowledge. The computer systems and networks' role and significance and information and communication technologies become decisive for the forming of New Economy.

The changing business world forms a set of challenges to automated economic data processing systems in the enterprises, firms and corporations. They could be examined in the following directions:

* Гейтс, Бил, Бизнес със скоростта на мисълта (Дигитални нервни системи). С., Издателска къща "Ciela", 1999 г., с.28.

- a. Architectural, functional, substantial and technological improvements of automation data processing in business;
- b. Evolution from converting data into information to transforming information into knowledge. This trend is seen as an intellectual support of enterprise management summarized in form as Business Intelligence;
- c. Internet technology penetration into the business and vice versa proposes and requires developing of information infrastructure in economic organizations and this concerns economic data processing systems in particular. The adapting of classical business IT to strategies platforms and solutions of E-Business and lately for Mobile Business is a topical question.

1. THE NEW REALITIES OF BUSINESS MANAGEMENT AND AUTOMATED ECONOMIC DATA PROCESSING

The management of enterprises, firms and corporations is realized taking into account not only the internal specifics of the organization, but the processes and trends in national, regional and the global business environment as well.

The new realities of business management and related to them development of information and communication technology and in particular automated economic data processing, are under the influence of many strategies and trends. Generally and systematically this could be shown in the following way: (See Fig. 1.)

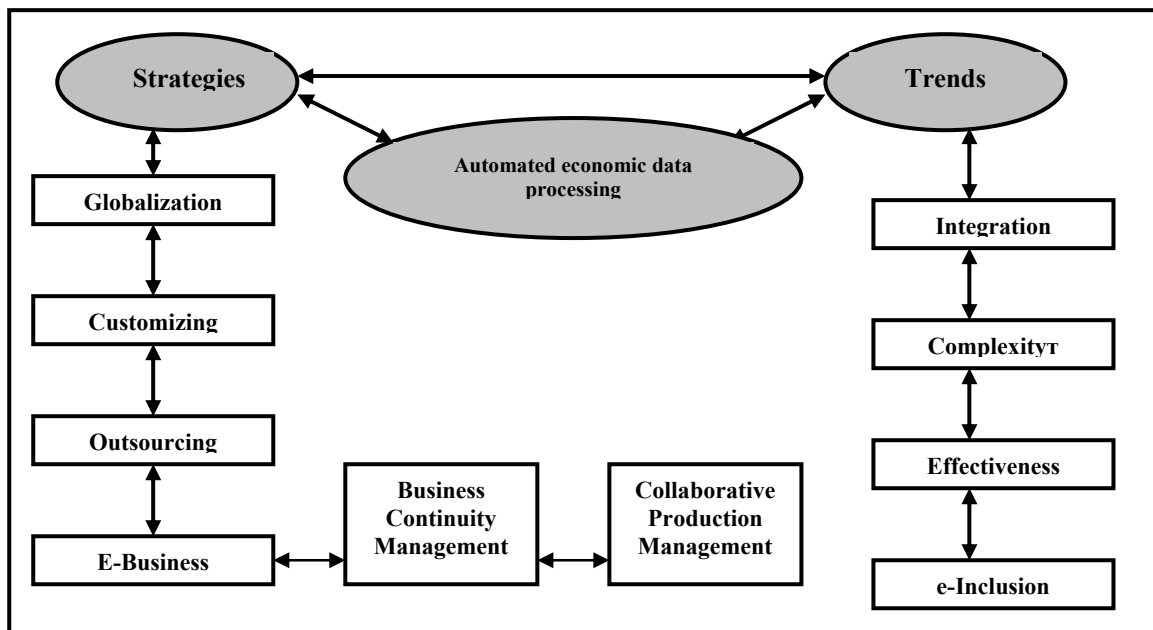


Fig. 1.

The strategies and trends typical for the contemporary changing business world influence on architectural, functional, substantial and technological improvements of automated economic data processing in the following manner;

Firstly, automated economic data processing in the enterprises, firms and corporations is developed and organized on a system basis. This presupposes integration of all activities, tasks, technologies, procedures and operations of automated economic data processing.

The integration is based on a single time registering and collecting the source data and their transforming into information, which supports the business management. This means that automated economic data processing system should be strongly integrated with the following components of organizational production and technological infrastructure of the enterprise, firm or corporation:

- a. Computer-Aided Manufacture;
- b. Warehouse and trade information technology and systems;
- c. Automation work placements of the specialists and managers;
- d. Information systems of the basic business partners in business environment;
- e. National and regional information systems and technologies of public administration.

The complexity of automated economic data processing systems brings to cover all management activities and functions, starting from prognosis and strategic planning, current and tactical planning, marketing, accounting, control, analysis and finally ending with regulation of business processes.

In the leading world practices and mass cases automated economic data processing has a largest experience and traditions in the area of accounting, finance, logistics, production costs and prime costs, suppliers and clients, salaries etc.

The complex nature of automated economic data processing systems supposes their more intensive directing to producing, planning, control, analyzing and regulating.

Secondly, automated economic data processing is realized in corporation business information systems' environment as Enterprise Resource Planning (ERP) Systems.

ERP Systems combine top achievements of computerized information and communication technologies, oriented to business with best experience, traditions, tools and management techniques and methods.

Consequently, a very important reality of automated economic data processing is its closely binding to technologies and mechanisms of operational, tactical and strategic business management.

2. FROM DATA CONVERTING INTO INFORMATION TO TRANSFORMING THE INFORMATION INTO KNOWLEDGE

The basic mission of automated economic data processing systems has been always to automate labor-consuming, voluminous and routine procedures of transforming data into information aiming information support of business management.

Today the horizon of this mission is considerably broadened and it's focusing more and more is to so called intellectual assistance the processes of preparing and making optimal management decisions or Business Intelligence.[6]

Automated economic data processing with its tools, methods and technologies is oriented from converting data into information to transforming the information into knowledge. As the forecasts show the New Economy [5] will be characterized as economy of knowledge, in which knowledge management turns into a strategic task. [2]

The role and the importance of automated economic data processing in this process could be shown in the following way: (See Fig. 2.)

The basic decisions by which the new mission of automated economic data processing could be realized by following systems:

- a. Decision Support Systems (DSS);
- b. Business Expert Systems (BES);

- c. Executive Support Systems(ESS), focused on information aid of management echelon in business organizations;
- d. Tools and decisions for production-technological, financial-economical and social analysis of business activities.
- e. To effectively realize such decisions automated economic data processing should be supplemented with the following technology:

- 1) Data Warehouses (DW);
- 2) Data Marts (DM);
- 3) On-line Transaction Processing (OLTP);

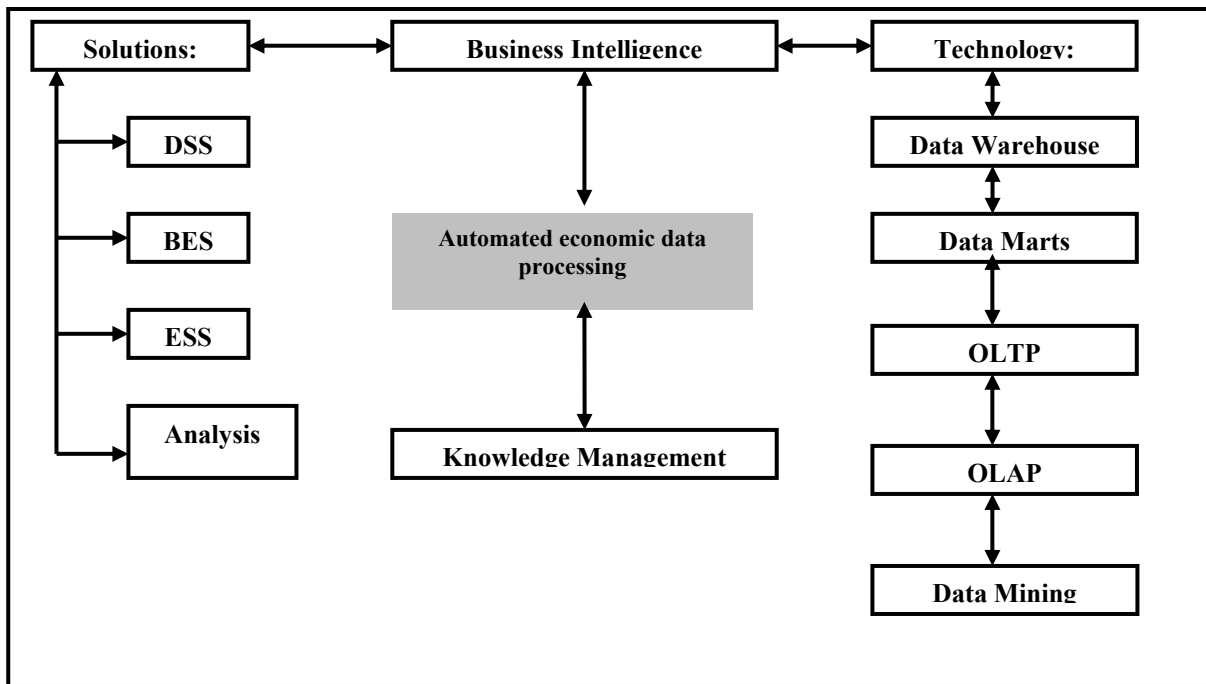


Fig. 2.

- 4) On-line Analytical Processing (OLAP);
- 5) Data Mining (DM).

3. AUTOMATED ECONOMIC DATA PROCESSING AND E-BUSINESS CHALLENGES

Electronic Business and Mobile Business change the philosophy for accomplishing business transactions in economic organizations. A part of business activities and in some cases all of them are transmitted in the virtual space.

All this set new challenges to automated economic data processing systems. The solution of these challenges, according to us, should be accomplished with the following principal scheme: (See Fig. 3.)

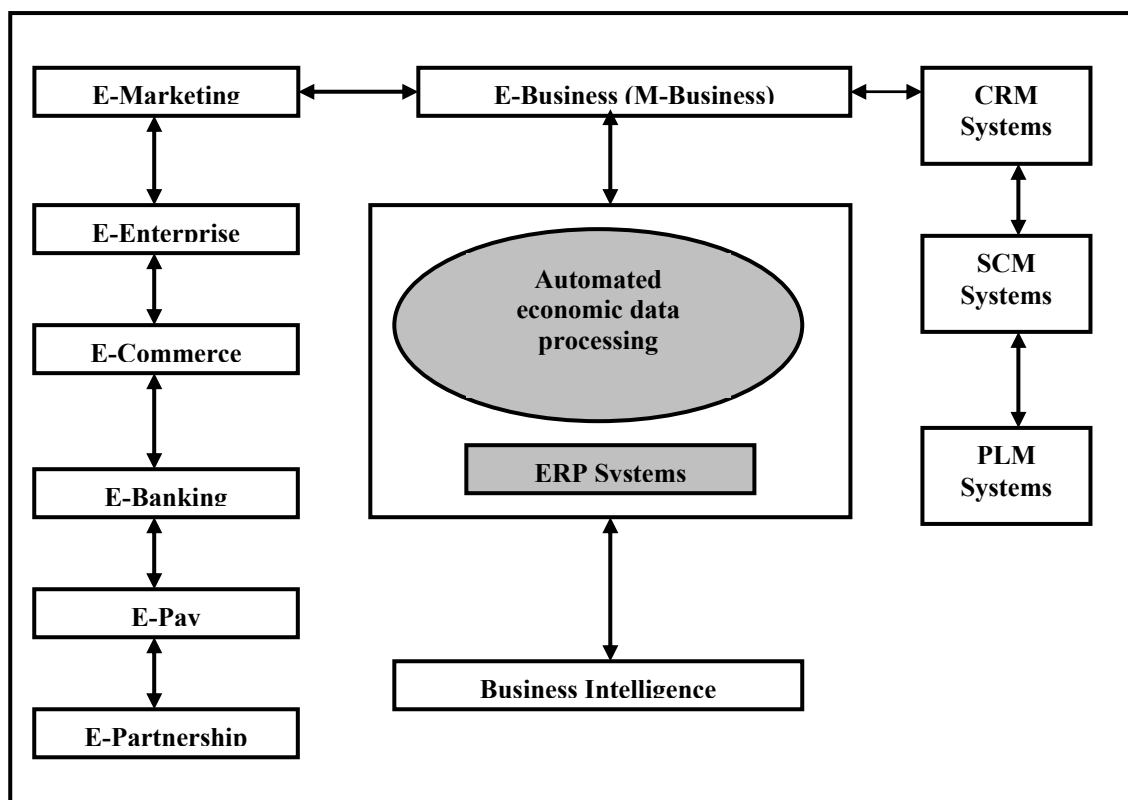


Fig. 3.

The architecture, contents and structure of automated economic data processing system should be in accordance with methods, tools and technologies of E-Marketing, E-Enterprise, E-Commerce, E-Banking, E-Pay and E-Partnership. [3]

Automated electronic data processing in E-Business environment integrates with the specific decisions, systems and technologies as:

- a. Customer Relationship Management Systems (CRMS);
- b. Supply Chain Management (SCM);
- c. Product Lifecycle Management Systems (PLM).

CONCLUSIONS AND FUTURE WORK

Automated economic data processing in the changing business world requires scientific and theoretical research with aims to aid the practical solution of new challenges before information and intellectual support of business management.

As a result of the study made in the paper could be drawn the following basic conclusions:

Firstly, automated economic data processing with its architecture, systematic, content, structure, functionality and development should be in recordance with and adopting to the new realities in business management.

Secondly, automated economic data processing resources are more and more oriented from converting data into information to transforming information into knowledge, by which the process of making optimal decisions is helped;

Thirdly, automated economic data processing and E-Business challenges are a new area in enterprises, firms and corporation activities.

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