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## FOCUS AND CHALLENGE OF NATIONAL APPLIED INFORMATION SYSTEMS IN PRODUCTION PROCESSES OR ACADEMY AND ACCOUNTING FIRMS

**Aleksandar Krstev<sup>1</sup>, Boris Krstev<sup>2</sup>, Darko Dimitrovski<sup>3</sup>, Dejan Krstev<sup>1</sup>**

### **Abstract**

In this paper, focus and challenge of information systems and technologies in production processes or academic and accounting firms will be shown. In modern conditions the successful implementation of goals and objectives of the enterprise or society depends on its effective use of information resources. Information resources are the basis for activities of enterprises and other subjects in EU, the availability of information resources and opportunities and implementation of information innovation, streamline information flows of the company, different firms and effective information interaction with market players as Bulgaria, Ukraine, Macedonia, Serbia, Croatia, etc.

**Keywords:** *information, resources, knowledge, system, innovations, infrastructure, enterprise.*

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## ФОКУС И ПРИДОНЕС НА НАЦИОНАЛНАТА ПРИМЕНЕТА ИНФОРМАТИЧКА ТЕХНОЛОГИЈА ВО ПРОИЗВОДНИТЕ ПРОЦЕСИ ИЛИ ОБРАЗОВАНИЕТО И СМЕТКОВОДСТВЕНИТЕ ФИРМИ

Александар Крстев<sup>1</sup>, Борис Крстев<sup>2</sup>, Дарко Димитровски<sup>3</sup>, Дејан Крстев<sup>1</sup>

### Апстракт

Во овој труд се прикажани фокусот и придонесот на информациските системи и технологии во производните процеси или образованието и сметководствените фирми. Во современи услови за успешна имплементација на целите и задачите на претпријатието, односно општеството, зависи од нејзината ефикасна употреба на изворите на информации. Изворите на информации се основа за активности на претпријатија и другите субјекти во ЕУ, достапноста на изворите на информации и можности и имплементација на информациска иновација, рационализација на тековите на информациите на компанијата, различни фирми и ефикасна информатичка интеракција со играчите на пазарот, како Бугарија, Украина, Македонија, Србија, Хрватска и др.

**Клучни зборови:** информации, ресурси, знаење, систем, иновации, инфраструктура, претпријатие.

### Introduction

The functioning of enterprises or academic community and accounting firms in EU members (Bulgaria) and potential members (Ukraine, Macedonia, Serbia, Croatia etc.) in the conditions of market economy requires managers and professionals able to see perspectives, make informed strategic marketing decisions that will promote the growth of their competitiveness. One of the basic concepts of normal business is activities management. Management as a philosophy of modern business, quality management and economic decision-making are directly related to the presence of complete, timely and accurate information about market demand for goods, consumer tastes, academy and university demands, market conditions, competitors' actions, etc. Significant amounts of information associated with prompt payments, search and providing relevant information for managers making decisions requiring the need for new, modern information technology.

Background information supports of business formed are under direct influence of factors of external and internal environment and focusing the company on growing information resources used for management. By effective use of information resources, company or academy determine the effectiveness of its current tasks, but also strategic development, requiring fundamentally new approaches to information of all activities. Better information support of business or education, lead to increase efficiency and adequacy of administrative decisions, the growth performance of enterprises, stabilize its financial condition, strengthening the competitive position on domestic and foreign markets and academy possibilities.

However, in modern economic literature, mentioned countries are still stated as not developed, regarding the problem of information support of industrial enterprises and academy community. Timely there is increasing need to further improve the principles, forms and methods, develop new scientific approaches and practical recommendations on information support of the enterprise, society or academy. The aim of the paper is to develop theoretical, methodological and some practical recommendations for activities of the enterprise and different firms or university. To achieve this goal have been resolved following objectives:

- The essence of information and for activities of industrial enterprises in Bulgaria and the necessity for activities of the enterprise and its main objective;
- The possibility of development of information support on national and regional levels on the example of the Bulgarian company “Bulahro AD machines in the city of Stara Zagora;
- Analyzed the structure and dynamics of market information products and services in other national fields or academy ;

### **Functional-based approach methods**

Methodological basis of the paper is a collection of scientific knowledge, and general scientific principles, methods and techniques used in the study process. The paper used: system-structural analysis (features and the role of information resources in modern enterprises, the analysis of market information products and services in Bulgaria), procedural and situational approaches (with the justification necessary for activities of the enterprise, while developing a coherent organization of information support enterprise development), functional-based approach (the development of fundamental approaches to the formation of enterprise information space), dynamic methods, theory, simulation and optimization method, graphical methods, methods for expert evaluation, system analysis and modeling

A database study contains the results of research on building the Bulgarian enterprise “AD Bulahro machines” in the city of Stara Zagora.

### **Scientific novelty of the results**

Scientific novelty of research results is as follows:

- proposed sequence of formation of information and control systems for industrial businesses, which allows you to build a hierarchical access to administrative information and optimize their management structure and its information flows;
- fundamental approaches to industrial enterprise information space based on his selection of functional and content structure and structural decomposition of the production process as an object of management;
- forms and directions for activities of industrial enterprises using the proposed decision support system based on the formation of information databases and complex simulation models for enterprises;
- received further development:
- methods and forms for activities of the enterprise, accounting firms or academy;
- principled approach to the evaluation and selection of information innovation by building a model multicriterion analysis, evaluation and selection of software products etc.

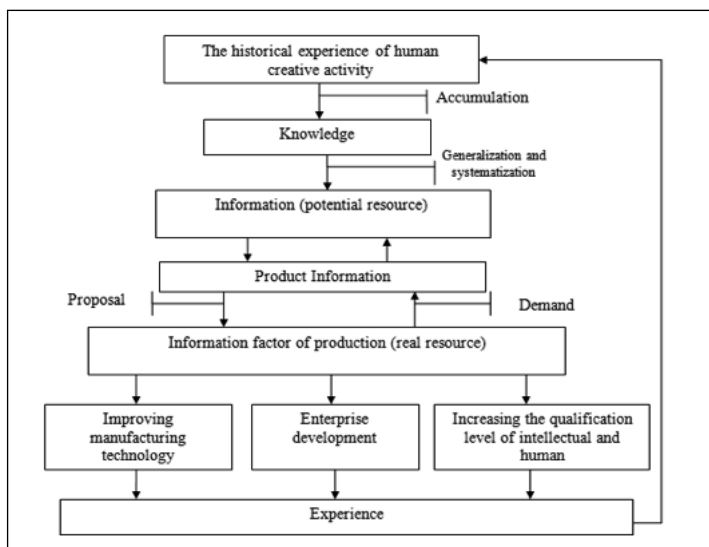
### **The practical significance of the results**

In results that are most practical importance, are:

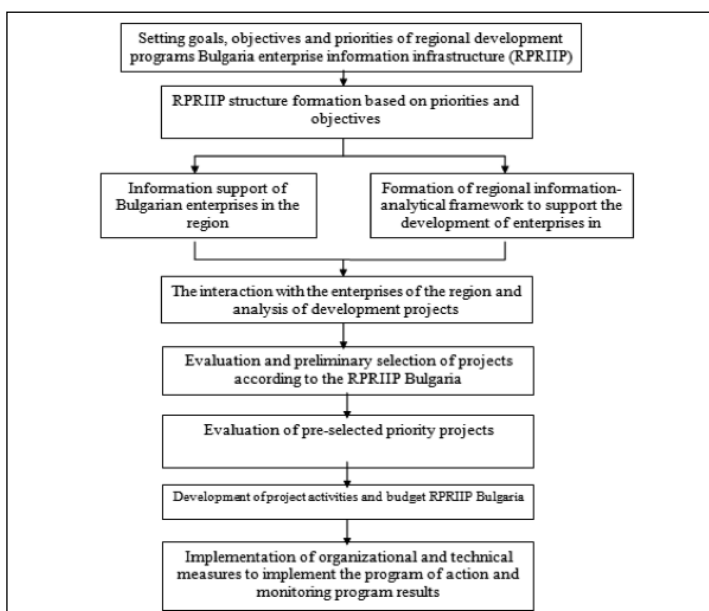
- recommendations for the development of enterprise information infrastructure based on the proposed implementation of a regional information-analytical framework to support their development, thereby ensuring consistency and improvement of information exchange of the market of the Republic of Bulgaria;
- recommendations on the evaluation and selection of information innovations that can solve the problem and the choice of information innovation.

The current stage of economic development requires the use of scientifically-based methods of data collection, analysis, processing and use of information. Accordingly, in the work using an approach based on the idea of resource cycle, the main resource characteristics and specific features of functional information and resources provided by the scheme of their reproductive cycle (Fig. 1-2).





*Fig. 1.* Reproductive cycle of information resources

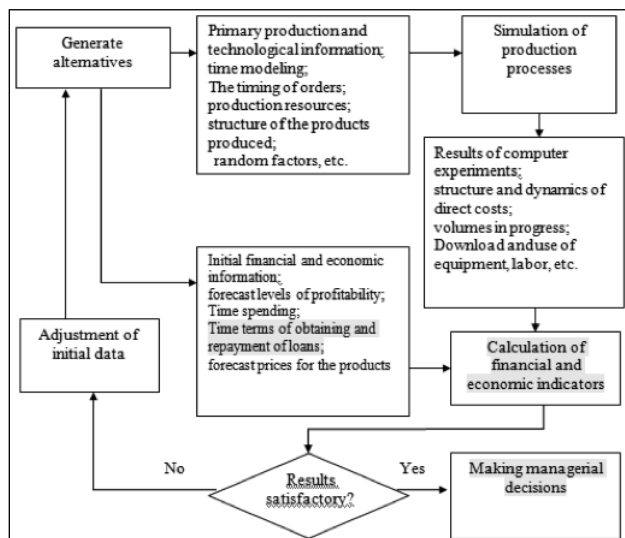


*Fig. 2.* Development of Bulgaria enterprise information infrastructure

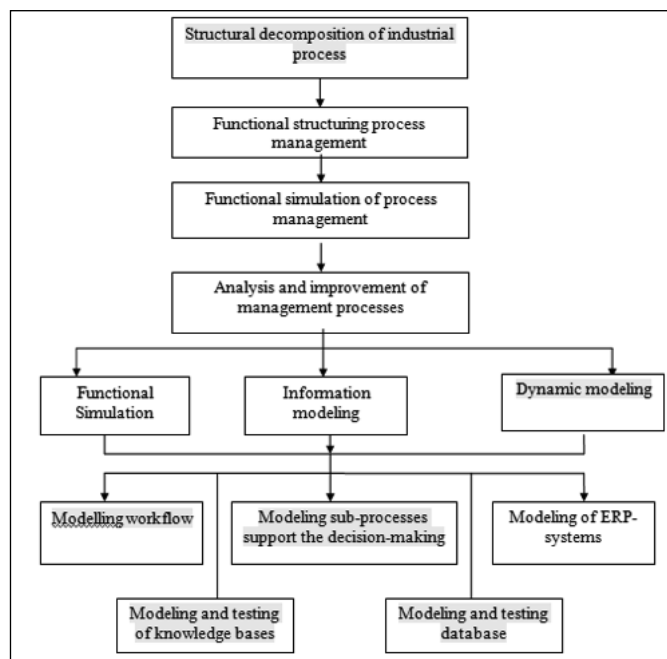
In Bulgaria, the first stage of deployment of a national WiMAX network based on Cisco Mobile WiMAX technology and architecture of IP NGN. Network is based on technology Cisco ® Mobile WIMAX and Cisco solutions for access and aggregation. By the end of 2009 Max Telecom plans to have coverage of its network in the home to 90 percent of the population, and Bulgaria to provide residents with fast and secure mobile access to advanced services. Bulgarian market is ready for broadband and WIMAX technology will offer high quality, competitive, reliable and secure subscriber services.

Performance information of the enterprise depends on the information of its interaction with various actors in the market of information products and services, public information support business development and formation of its information space. As part of the program in Bulgaria has developed a special program. As part of this program provides a unified functioning of the regional information-analytical framework to support the development of enterprises in Bulgaria, the organizational and economic model.

Development and management decisions are complex processes and play a special role of information management systems, effectiveness of which determines the ultimate effectiveness of the functioning of businesses. On the efficiency of the process aimed proposed decision support system, based on a formation of information databases and complex simulation models for enterprises.



**Fig. 3.** Consistency management decisions



*Fig. 4.* Modelling and testing database

The problem of designing an efficient structure of information and control systems company in the proposed deal on the basis of the evolutionary method using genetic algorithms. Building information-control system of the enterprise carried out by the standards of SADT, which include developing functional models and dynamic information management business processes. As a result of the simulation determined that the best management decisions to structure information flows in the process of adjustment is a mixed structure.

### **Intention of application of ERP system**

There is the intention for use of PANTHEON in small and mid-sized companies, universities and accounting firms, selecting from five versions offering different features and functionalities. These localizations for the markets of South-Eastern Europe are adjusted to legislation to suit local conditions. It is used in Slovenia, Croatia, Bosnia and Herzegovina, Serbia, FYR Macedonia and Bulgaria. Specially, this an ERP system is in particular suitable for use in accounting firms with access for the users to the electronic ledger containing subject accounts and chart of accounts. It's possible to support to select various financial reports, conducting e-business with governmental

institutions in all countries where this system is available. It's possible to create balance sheet reports quickly and in a straight-forward way and support commerce transactions between business (B2B), between business entities and government (B2G), and banks (B2Bank). Also, the possibility of automatic manual posting, payroll accounting, set-off, interest, debt collection, cash and foreign currency transactions, e-business with state administration etc.

### **Conclusion**

The paper provides theoretical studies and practical solution to current scientific and practical tasks which aim to improve information of the enterprise. Key findings and results that were obtained are:

1. The special role of information and information resources in modern enterprises.
2. Determined that information for the enterprise should be based on the complex use of potential and existing information resources with their basic features.
3. The development of the Bulgarian market of information products and services.
4. The necessity of effective information exchange and information infrastructure.
5. Solution Promotion of important problems of effective interaction of market information.
6. The organizational-economic model of a single regional information-analytical framework to support the development of industrial enterprises
7. A decision support system, which is forming the basis of information databases and complex simulation models for enterprises. On the basis of this system model of decision making in production by building a set of management information about the production and use of industrial engineering resources.
8. The possibility of automatic manual posting, payroll accounting, set-off, interest, debt collection, cash and foreign currency transactions, e-business with state administration etc.

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