

# THE APPLICATION OF APPROPRIATE INFORMATION SYSTEMS IN DIFFERENT PROCESSES

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## Abstract

*In this paper will be shown the role of information systems and technologies in production processes in the EU members countries and candidates members for EU. In modern conditions the successful implementation of goals and objectives of the enterprise depends on its effective use of information resources. Information resources are the basis for activities of enterprises in EU, they define their strategic success. Information support of the enterprise depends not only on the availability of information resources and opportunities and implementation of information innovation, streamline information flows of the company, the issues of its effective information interaction with market players. Information support of the enterprise depends not only on the availability of information resources and opportunities and implementation of information innovation, streamline information flows of the company, the issues of its effective information interaction with market players as Bulgaria, Ukraine, Macedonia, Serbia, Croatia etc.*

**KEYWORDS:** INFORMATION, RESOURCES, KNOWLEDGES, DATA, PROVIDING, METHOD, SYSTEM, INNOVATIONS, ESTIMATION, INFRASTRUCTURE, SPACE, ENTERPRISE, PRODUCT, FORMING, INFORMATIVE STREAMS.

## 1. Introduction

The functioning of enterprises in EU members (Bulgaria) and potential members (Ukraine, Macedonia, Serbia etc.) in the conditions of market economy requires managers and professionals the ability 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 management activities. Management as a philosophy of modern business, quality management and economic decision-making directly related to the presence of complete, timely and accurate information about market demand for goods, consumer tastes, market conditions, competitors' actions, etc., as well as the performance object management. 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.

In modern conditions the successful implementation of goals and objectives of the enterprise depends on its effective use of information resources. Information resources are the basis for activities of enterprises in EU, they define their strategic success. Background information support of business formed under the direct influence of factors of external and internal environment and focusing the company on growing information resources used for management.

Effective use of information resources company determines the effectiveness of not only its current tasks, but also strategic development, requiring fundamentally new approaches to information of all activities. Better information support of business leads to increase efficiency and adequacy of administrative decisions, the growth performance of enterprises, stabilize its financial condition. All this leads to strengthening the competitive position on domestic and foreign markets.

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streamline information flows of the company, the issues of its effective information interaction with market players. Information support of the enterprise depends not only on the availability of information resources and opportunities and implementation of information innovation, streamline information flows of the company, the issues of its effective information interaction with market players as Bulgaria, Ukraine, Macedonia, Serbia, Croatia etc. To date, the characteristics of informational support of the enterprise paid insufficient attention both in theoretical and in practical aspects. Timely is the need to further improve the principles, forms and methods, develop new scientific approaches and practical recommendations on information support of the enterprise. To achieve this goal have been resolved following objectives:

- The essence of information and for activities of industrial enterprises in Bulgaria and Ukraine 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;

## 2. Some approached methods

Methodological basis of the paper is a collection of ways scientific knowledge, and general scientific principles, methods and techniques used in the study process. The theoretical basis of scientific work were Bulgarian and foreign scientists in the field of management and information support its activities.

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 (the construction of information and control system, the formation of decision support systems), graphical methods, methods for expert evaluation, system analysis and modeling (in developing ways to evaluate and select information innovations). A database are the results of research on building enterprise Bulgaria "AD Bulahro machines in the city of Stara Zagora.

### **3. Obtained and shown results**

The main scientific result of research is to develop fundamental approaches to building information-control system, formation of enterprise information space and the sequence evaluation and selection of information innovations that are based on the principles and methods of information theory and information systems and enterprise management. 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 in Bulgaria 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;
- principled approach to the evaluation and selection of information innovation by building a model multicriterion analysis, evaluation and selection of software products, taking into account risk factors and their solution of a multidimensional comparison.

### **4. The practical information**

Developed in the paper approaches, methods and results are methodical base for activities on the basis of principles and methods of information resources management, information and innovation development. 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 of a multidimensional comparison of software products and evaluate risk factors for the decision on the choice of information innovation.

The special role of information and information resources of modern Bulgarian, Ukrainian and FYROM (or Western Balkan) enterprises due to their direct participation in any economic processes and the ever increasing level of information the market environment and society in general. The current stage of economic development requires the use of scientifically-based methods of data collection, analysis, processing and use of information and its interrelated forms, which should promote the potential of enterprise information resources and consistent implementation of its directions of development. 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.

At the time, the primary role in this process are information and Internet technologies that are still classified as "high technology", but actually has a base that is essential for modern developed economies. It is proved that the search for answers to these and similar questions directly affecting the different aspects of evaluation and selection of information products or services offered and identify factors that determine the "quality system" of information resources. It should be noted that at present no methodology of quantitative and qualitative assessment of information resources, and forecasting needs of society in them. This reduces the efficiency of information as information resources, and increases the duration of the transition from an industrial to an information society.

Rationality and characteristics of the theoretical foundations for activities of the enterprise allows to determine the possibility of a synergistic effect of the interaction of information and production areas and increase their effectiveness and concluded that the impact of this process depends on the degree conditions and opportunities for activities of enterprises in countries.

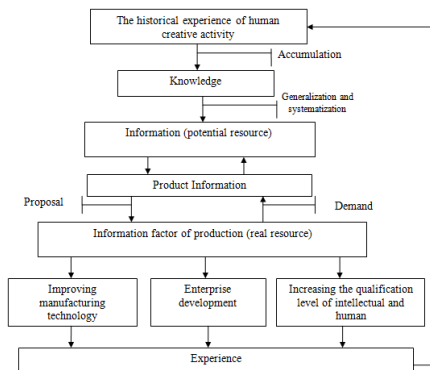


Fig. 1. Reproductive cycle of information resources

Building sustainable market information services in Bulgaria began in mid-50's were at this period the main suppliers of information services were entirely information services of academic, professional, scientific and technical societies, government agencies, educational institutions. The present period of modern information market in Bulgaria is characterized by rapid development and dynamic growth. Such active dynamics caused primarily the development of modern high information and communication technologies as well as general trends go to the global information society.

In Bulgaria today is rapidly forming the market of information products and services. In recent years a much stronger technical and technological base of information is increasing sales volume of information, computers, telecommunication equipment. Contribution of industries of information and communication technologies and the amount of information and communication services in the Bulgarian GDP today is already about 6%. Market information and communication technologies, a major market segments and greatest information products and services in general has kept growth. Ukraine has also seen rapid growth of information technology, as evidenced by the following data: in 2005-2007 there is market growth of 20-25%, and 2008. the figure increased five times. Note that all the latest in IT-products enter the Bulgarian market in conjunction with other countries. Also quite actively developing retail networks, are coming to market of new producers, which in turn leads to increased competition.

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. Bulgaria's first broadband mobile communication network is utilized to service in ten cities including the capital of Bulgaria - Sofia and two ski resorts taps. Bulgarian market is ready for broadband and WIMAX technology will offer high quality, competitive, reliable and secure subscriber services.

Development and management decisions is a complex process, whose implementation should be based primarily on accurate and comprehensive information on all management levels. In this context it plays 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.2.

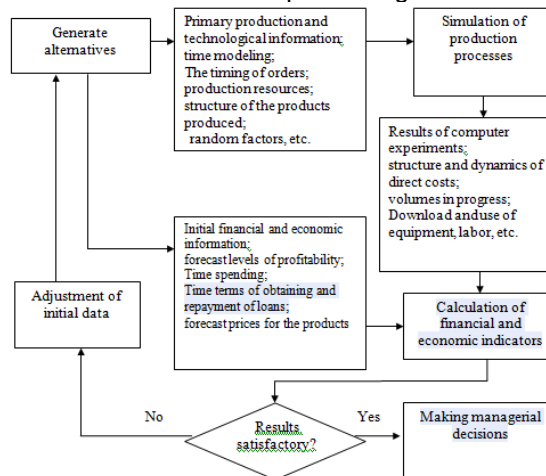


Fig. 2 Consistency management decisions with DSS at the "Bulgars AD machine - Stara Zagora

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. The functioning of such a structure of information and control systems to optimize enterprise management and information flow and its standard processes. One of the main criteria optimization criterion defined time performance of typical data processing procedures.

Table 1.

Criteria \ PP	PP-1			PP-2			PP-3			PP-4			PP-5		
	B	C	N	B	C	N	B	C	N	B	C	N	B	C	N
1. Versatility															
2. Integrating															
3. Modularity															
4. Sophistication															
5. Reliability															
6. Privacy policy															
7. Compliance with technical standards															
8. Qualification															
9. Cost PP															
10. Cost service															
11. Eco-efficiency															

Designation of priorities: B – high, C – average, N - is low.

Given sufficient diversity of modern market information products and services as of the assessment team identified the following information innovations, like software, and proposes a way to value them. A multiple comparison procedure involves the use of both quantitative estimates and qualitative expressed in descriptive categories, which enhances the analysis by obtaining estimates for criteria that cannot expose quantitative measurements. These estimates form the scale of measurement is the basis for decisions on selection of software. (Table 1). According to the principles of multidimensional comparison for each pair of software products designed indicators match and inconsistencies by building a matrix of risk.

## 5. CONCLUSIONS

The paper on the basis of studies carried out theoretical studies and practical solution to current scientific and practical tasks to improve information of the enterprise. Key findings and results that were obtained during the research are as such.

- Determined that information for the enterprise should be based on the complex use of potential and existing information resources with their basic features.
- Courtesy of the general characteristics of information resources and formed the basic approaches to evaluation using an information approach, theories of information resources and economic information and implementation of these approaches.
- The organizational-economic model of a single regional information-analytical framework to support the development of industrial enterprises.
- Under the proposed information environment for enterprises to understand the totality of information database and how the organization needed for management decisions, analyze, control and regulation of financial and economic activities.
- 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.

- A sequence of forming information and control system of the enterprise by using an evolutionary method using genetic algorithms.
- It is definite, that the informative providing of activity of enterprise must be based on the complex use of informative resources potential and present taking into account their basic features of each EU country.

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