



INDUSTRIAL SYSTEMS FROM CRISIS TO DEVELOPMENT

PhD Zdravko Bijelić

(Institute "LOGOS" in establishing Novi Sad, e-mail: bijeliczdravko@gmail.com)

Biljana Milanović

(University of Novi Sad, Faculty of Economics Subotica, Subotica, Serbia, e-mail: milanovicbiljana82@gmail.com)

Mirjana Jovišić Simić

(University ALFA-BK Belgrade, Belgrade, Serbia, e-mail: mirjanajovisic1985@gmail.com)

Abstract *Development is the most complex social activity and for successfully managing the development of such a change must be used in the most reliable methods and techniques in the field of system excellence. Holders of the system excellence can be people of exceptional creativity and creative abilities. In a system of integrated management of the successful development of industrial systems is one of the key problems is to find a motivational solution to activate the creative potential of creative and capable people.*

In conditions of extreme dynamic changes, effective change management has become a measure of successful development. To successfully manage the development of some of the elements of the system, a group of elements or integrated system is necessary to create a satisfactory structure of developmental mechanisms integrated into one system. Successful logistics solution to this problem can only request the appropriate knowledge. Development at its essence is a business activity is focused on the future and the long term. Activities short-term, the development may not be adequate logistical support. Social irresponsibility is certainly an extremely influential deviation of positive this branch off. We need changes in the field of business valuation and styles of behavior of people in the economy. Needs to be viewed mam socially responsible livelihood integrated with other essential factors of development. This is particularly evident in industrial s

Key words: *crisis, development, industrial systems*

1. INTRODUCTION

The industry has always been extremely dynamic and complex business economy. However in today's time when the global and all lower levels of business activity have a very dynamic, complex and turbulent change, problem complexity and dynamism in industry is particularly manifested.

Under such conditions, and traditionally very high competition in the field of industrial enterprise, has created a need for business entities from industry inevitably you will use the most efficient and most effective methods of management and decision-making. The aim of this paper is to show and point out that today is a key factor in the successful management of industrial systems in the application of integrated knowledge.

The main problem in the Republika Srpska is that industrial systems today use very little contemporary knowledge and what employees are not treated in the spirit of modern science on human resource management. Even a superficial analysis leads to reliable scientific attitudes that tourism office space that

has a special need to apply modern management human resources based on an integrated knowledge.

The subject of work in the synthesis of a large number of scientific attitudes, especially the first author in the field of modern management development, and focused on the industrial systems as extremely useful but complex area of business.

The task was to show how a team integrating knowledge can achieve integrated knowledge especially successfully use in the field of tourism. In this way we want to, mainly to send a message to people who make decisions about the industry, how to efficiently use intrgrated knowledge can bring immense benefits to the entire community.

The paper is a starting-scientific hypothesis that industry is particularly important and complex business field and that which can be successfully managed on the basis of integrated modern management as well as technical knowledge.

The second, derived hypothesis is that the successful management development in the field of industrial systems and thus the development of human resources

in the tourism industry need to establish an efficient and effective organizational mechanism at the level of the business entity that is engaged in profitable business in the field of industry, as well as at the level of social and political community.

The proposed hypotheses are working system of spontaneous scientific analysis confirmed with great certainty, and with very little risk can be argued that the application of integrated management of human resources development in the field of industrial systems based contemporary concept intelligent economy has brought immense benefits very quickly. The authors of this paper wish to send a message to internal and external management structure really complex economic system to which industry is to have a future only those who accept these claims[20].

2. CHANGES FROM CRISIS IN DEVELOPMENT

All forms of social deviance, given the intensity of consequences may include: crisis, chaos and disaster. In formal mathematical terms between development and crisis makes no difference, because the development and crisis of the same part number system (Developing positive part, and the crisis negative). Of course, from the perspective of the value of business it is about two different things [6].

The development can be the most successful handle the crisis, and the space in which we have established a lasting and dynamic engine of economic development is extremely favorable ground for various forms and frequent crises.

The crisis, as well as the development may be different due to: the source, nature, duration, the field to which it relates, other factors instigator of the crisis, holders of the crisis, the intensity, the ability to manage the relationship with the environment etc.

1. Character creation: technological, organizational, management, software, personnel, financial, multifactorial and integral;
2. For the duration: immediate, short term, medium term, long term and permanent;
3. Given the field covered: social, political, economic, health, education, management, population, etc.;
4. Considering the type of factors instigator of the crisis: the market, technological, financial, human, war;
5. On the human factor: a leader, manager, employees, youth etc.
6. For intensity: extreme intensity, strong, medium and low intensity. A deep, wide and deep and wide, shallow, narrow and shallow and narrow.
7. The ability of management: management entirely possible, in part, impossible;
8. On impact: Crisis with the influence of the environment, in part, the impact of environment and interior.

Value is different coming to the same point on the two sides numerous wasps or on the wrong life cycle of an organization or a community or an individual.

From the perspective of quality values for the crisis can be said that the half-empty glass, and for the development of half full.

For a successful exit from a crisis or a successful process of development is very important alt is to determine the algorithm. One possible algorithm would have the following steps: Plan out of the crisis, Definition: how, when, by whom and with what; determining potrebnih material and human resources, identification of possible variants out of the crisis, the choice of the optimal variant, implementation and evaluation of success. Plan out of the crisis or development plan are creative phase consisting of the following steps: a torrent of ideas, idea selection (rejection), incubation (birth) acceptable idea, checking ideas, applying ideas and testing and monitoring of the effects.

Activities related to crisis management and management development is practically impossible to have the same personality, because the same person is not competent to do both.

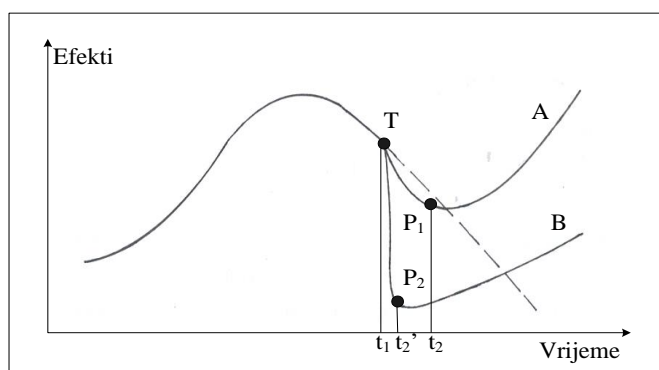


Figure 1 Transformation of the crisis in develop

Operations are based on reproductive knowledge and operational technologies and are subject present and last time, and the logical Operations are based on reproductive knowledge and operational tech last time, and the logical develtd knowledge, technology development and the subject of the futu

Figure 1 shows an illustrative flow process of transformation crisis in development. Curve A illustrates the process and change over a longer time interval ($t_2 - t_1$), curve B change in a shorter time (rapid, revolutionary change) ($t_2 - t_1$), Point T is Start transformations and changes.

Since the point P₂ at a much lower level of efficiency than the point P₁ that is clearly a much greater risk that the revolutionary (fast) changes. However, the crisis that is slowly breaking lasts longer.

speed and a linear function of the intensity change [6], Cost changes are a linear function of power changes, The power transformation, and the effort or capacity, which is needed to perform the change of square of and the costs of reducing the efficiency of a system or process are inversely proportional force. Summing up the two said cost is obtained function of total costs. The power of the minimum cost of an optimal power which should be appointed for the observed changes [6]

3. ANALYSIS OF INDUSTRIAL SYSTEMS

The following table lists the parallel structure with values for traditional to modern industrial system. [19]

The values of traditional systems		The values of modern systems	
01.	Rigid systems	01.	Flexible systems
02.	Operating and capital-intensive	02.	Knowledge intensive processes
03.	Built-in constraints	03.	Without built-in limitations
04.	effects of parts	04.	Synergic effects of parts
05.	A large number of hierarchy levels	05.	horizontal organization
06.	Centralization	06.	Decentralization
07.	Solid organizational structure	07.	Flexible body structure
08.	One-organization	08.	Two-way communication
09.	Problem-Crisis	09.	Possibility of-Opportunity
10.	Random development programs to	10.	Development programs to the pot.
11.	Certainty and Security	11.	Uncertainty and risk
12.	Social initiatives	12.	Social, collective and private initiatives
13.	Tactical approach	13.	Strategic approach
14.	Random decision	14.	Systemic decisions
15.	Specified Procedures	15.	Effective procedures
16.	Stability	16.	Changes
17.	Ignoring the competition	17.	Respect for competition
18.	Special knowledge	18.	Integral knowledge
19.	Discipline	19.	Self-determination
20.	Obedience	20.	Participation
21.	The individual contribution	21.	Teamwork
22.	The amount of labor expended	22.	Orientation to the needs
23.	Career	23.	Personal Development
24.	Efficiency	24.	Creativity
25.	Power	25.	Ability to compromise
26.	Manage in accordance with regulations	26.	Management in real time
27.	Planning of operations	27.	Event Planning
28.	The static	28.	Dynamism
29.	Equality	29.	Diversity
30.	Manage items	30.	Process management
31.	Bureaucracy	31.	Organizational culture
32.	Management functions and parts	32.	Integrated management and excellence
33.	Profit	33.	Capital
34.	Internally responsible	34.	Corporate Social Responsibility

4. MODEL OF MODERN INDUSTRIAL SYSTEM

Basic characteristics of the modern industrial system that must have a clearly defined mission, cileve and strategy business. So there must be a clear and reliable business plan which is a dynamic character, and to be constantly reviewed and updated.

Livelihood development-oriented industrial system should be created on the basis of non-financial indicators of efficiency and effectiveness. These are indicators of future primarily related to:

- Markets and customers
- Internal business processes and
- Continuous learning and development

Financial indicators should be the only measure of the value observed industrial system.

It is necessary to constantly monitor business processes and efforts to improve them. Through the development of the system: motivation, training employees, improving information and communication systems of lifelong learning and ongoing development.

Regarding the future of the market and customers, it is essential that the system is capable of delivering quality products and services and the delivery of effective and to have customer satisfaction. Internal business systems and processes must be flexible and to continuously support the objectives set buyers.

Learning and development should be an ongoing process that will be successful if the employee successfully perform their tasks.

Management should determine the position of the industrial system at the present time, a time closer to the time still future [9].

For each of the strategic goals should be to develop operational objectives and operational tools. Covering a certain time interval and a particular process.

As far as the financial aspects of modern system of economy they should have the measure of value. Quantitative measures of the value of the profits and capital. Modern systems are oriented more on capital.

Modern industrial systems must continually develop standards relating to:

- Quality
- The environment
- Health and safety at work environment

Based on these standards are defined and Control Systems Control systems can be autonomous for each of the control activities or integrated into a system of integrated management. industrial system may have more integrated systems, or one where a complete integrated all control elements.

In Figure 2 is shown depending on their integrity by the number of management activities.

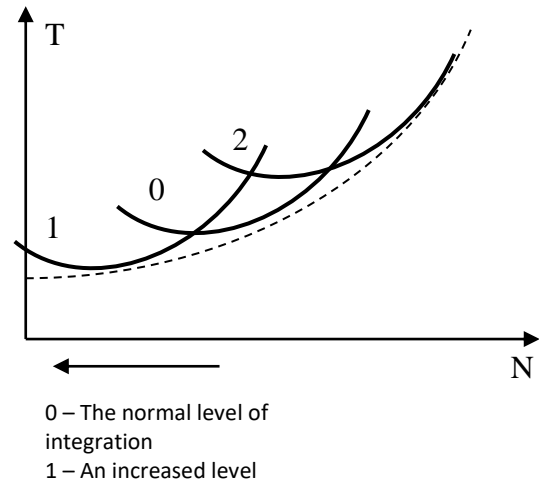


Figure 2 Dependence of the integrity of the number of control activities [6]

The aim is to define a model of the industrial system integrated in the key factors:

1. Own development and production technologist
2. Competitiveness in the market with customers
3. Protecting the environment
4. Quality of products
5. Safety and Security
6. Employee motivation
7. Social Responsibility
8. Business climate, culture and ethics
9. Competent management
10. Minor corruption
11. Effective state and local administration

Where the prevailing view of the world from the perspective of the jungle, modern entrepreneurship, and enlightened management practically impossible. If all people share the hammers and naokovnje wolves and the lambs and then brotherhood, common goals, identification with the goals of the team becomes complicated, limited or impossible. It must be possible to identify with a fairly wide circle of human beings. A complete autocrat can not have anyone to identify or perhaps at best it can with their blood relatives. From this it follows that this is another principle of evaluating employees for enlightened organization. Ariitokrate is either excluded or transformed. Certain types of democratic managers their companies brings higher profits, but also every person in the firm makes you happy and satisfied [4].

Menaddžeri enlightened entrepreneurship and the enlightened companies create enlightened economy. Enlightened economy implies good will among all members of the organization instead of rivalry and jealousy. Enlightened economy creates synergistic benefits for the company as a whole and for all individuals who are in any way in the system. Enlightened companies is certainly socially responsible. It strengthens sinergtski quality

management principles of modern entrepreneurship and hence entrepreneurs and employees.

Growing needs of an individual, inbred drive for survival and development, the environmental conditions and stable overcoming condition was caused by the at certain processes significant characteristic changes the characteristics of which determine the state at the time of observation, and sets the requirements for further development. Limit the size adjustment and conditional on the emergence of new, more effective development patterns that carry new values important for the further development [24].

5. MECHANISMS FOR THE ESTABLISHMENT OF NEW INDUSTRIAL SYSTEMS

New or modern industrial systems must be based on managerial and technological knowledge and excellence in systems such as intelligent economy. Management structure must have a high degree of social responsibility. Technology needs to be in large degree a result of its own development. The structure of products and services should have the optimal portfolio. Mechanisms for setting up new industrial system can successfully build only on a system of integrated management of integrated processes and systems based on modern knowledge. It is necessary to make optimal integration of all factors of a successful economy, primarily the optimal integration of management integral processes related to industrial systems. Optimization criteria should be cost related to the process of integration of industrial systems.

A key mechanism for the establishment of new industrial system in the Republika Srpska are:

1. Own development of new products and services
2. Second own development and production technology
3. Modern human resources training three mechanisms

For each of these three key mechanism can be establish: single management system, they can be integrated into the system equations, best solution is the integration into a single system and with other management activities.

Why integrated industrial systems in the Republika Srpska based forward these three mechanisms? Because today the largest share in the cost of products and services are the price of knowledge, development and technology. Besides the fact this approach is the most socially responsible because it creates the possibility of the largest employment.

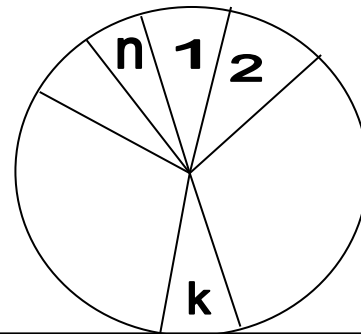


Figure 3. Wheel integrated from n segments

In Figure 3, in a symbolic way, by which point it rolls screenname is a complete integrated management system to modern industrial systems.

Each of the n segments individually or in groups supporting sustainability point of existence.*

The integration of a large number of mechanisms and elements of business in an integrated management system that works with the orientation on processes, it is for every modern industrial system is a great challenge and a safer and more certain future.

Industrial systems to manage their business establish system integrity in the way the business excellence and continuous success. To this began to happen in the Republika Srpska then you need the integrated carriers of knowledge.† The key solution is the creation of an organizational mechanism.‡

6. RESEARCH

Research conducted in connection with the case and the problem dealt with in this paper have the following objectives:

1. To determine whether the Republika Srpska economy there is a general crisis.
2. To determine the structure factor constraints and opportunities related to crisis management and development in the Republika Srpska.
3. That is projected development model based on the integrated management of integrated development of the application of knowledge excellence.

In order to develop these objectives it was necessary to do the following tasks:

- To study the extensive relevant literature.
- Collect a large amount information and data.
- Consult a wider range of expertise of others.

* Eliminated one or more segments means the absence of the system. Each of the segments of time can have a significant effect depending on the position in relation to sex, if the radial distance is taken as a measure. It is also symbolic of each segment will at some time have contact with sex rolling, or any mechanism or element management system of industrial systems may be the most important or least important, but they have to exist.

† Needed are individuals who possess integrated knowledge required teams and organizations of integrated knowledge.

‡ This mechanism is certainly an organization for the integral development of the Republika Srpska. In my view, we should first integrate the activities of the ministries so that we have a Ministry for Science, Development and Higher Education and the Ministry of Economy. Second, to establish an organization that will deal with specific operational development etc. which will create projects.

- Create a developmental model.
- Carry out the necessary research and provide assessment proposed hypotheses.
- Perform certain scientific and research positions.
- Provide an estimate of the reliability of the established attitudes.

The study hypotheses:

Basic hypothesis

1. Development model for industrial systems based on: the development of its own products and services, the development of its own technology and application of integrated knowledge are the three basic factors to create the structure of modern industrial system in the Republika Srpska.

Additional hypotheses

1. Most industrial systems in the Republika Srpska

located in zone of chaos with a serious threat to disappear.

2. Successful and extensive reindustrialization in

the Republika Srpska possible only with the realization of organizational mechanisms Centre for integrated management of the

development of Republika Srpska.

There were used the following methods and techniques: Methods of analysis and synthesis, comparative methods, verification methods, methods of mathematical modeling, statistical method, brainstorming, benchmarking, Delphi and survey techniques, as well as the dialectical method, the method of induction and deduction method and logical reasoning. For the purpose of research related to the purposes of this study were selected two samples of 20 industrial systems in order to determine the degree of crisis and possible deviations. Chosen by five groups of respondents in each group of 10 patients: Experts in industrial systems, industrial systems Managers, Employees in technical industries, students and others to confirm or reject the set of hypotheses. By processing the data obtained by the authors of the work led to the following research results: **All the proposed hypotheses were confirmed at a high reliability based statistical Chi-square test.**

7. CONCLUSION

Industrial systems are vast and complex field of business in which he can execute to apply a broad corpus of modern management and technology skills and knowledge from other scientific fields. Integrating this knowledge creates a reliable assumption for much more efficient management of industrial systems. Human resources or people carriers modern knowledge are the key factor influencing the general social development and thus the industrial system.

In the Republika Srpska existing industrial systems are in crisis, many in a state of chaos, and some in a mess. By applying the techniques of integrated management and technology reengineering can begin to create a modern industrial systems

8. REFERENCES:

- [1] Abrahan, M. (2007), Psihologija menadžmenta, Asse, Novi Sad, Serbia.
- [2] Adižes, I. (2005), Upravljanje promjenama, Asee, Novi Sad, Serbia.
- [3] Adižes, I. (2009), Kako izaći iz krize, Asee, Novi Sad, Serbia.
- [4] Berman, Z., Najt Dž. (.2007), Finansijska inteligencija, Asse, Novi Sad, Serbia.
- [5] Bijelić, Z. (1982), Control modelling by optimal production development, VI Internacional conference on production research, Novi Sad, Serbia.
- [6] Bijelić, Z., Milanović B., Savremeno upravljanje razvojem, Neobjavljena knjiga, Serbia.
- [7] Bijelić, Z. (2014), Matematičko modeliranje razvoja, Zbornik radova MASTA 2014 Banja Luk. BiH. development, International conference POPULATION: Development/Crisis, Novi Sad, Serbia.
- [9] Čosić, I., Maksimović, R. (2011), Proizvodni menadžment, FTN, Novi Sad, Serbia.
- [10] Draker, P. (1996), Inovacije i preduzetništvo, PS Grmeč, Beograd, Serbia..
- [11] Dryden, G. (2004),)Revolucija u učenju, Beograd, Timgraf, Beograd, Serbia.
- [12] Đurić, Z. (2006), Upravljanje promjenama i razvojem preduzeća i osnovni alati u ovim aktivnostima, Univerzitet Braća Karić, Beograd, Serbia.
- [13] Madžar, Lj. (2006), U potrazi za novom državom – iz perspektive poslovnog sveta, Centar za ekonomska istraživanja, Beograd, Serbia
- [14] Marić, B. i Bijelić, Z. (2010), Upravljanje investicijama, V.Š.Prometej, Banja Luka, B/H.
- [15] Milačić, V. (2010) Industrija znanja – Nova magistrala održivog razvoja, Novi Sad, FTN, Serbia.
- [16] Sengi, P. (2008), Peta disciplina, Asse, Novi Sad, Serbia..
- [17] Sengi, P. (2008), Peta disciplina, Asse, Novi Sad, Serbia.
- [18] Stojanović, V. (2008), Tehnološki menadžment, Banja luka, B/H.
- [19] Tisen, R. (2010), Dividenda znanja, Asse, Novi Sad, Serbia.
- [20] Todić, V. (2011), Tehnološka logistika i preduzetništvo, FTN Izdavaštvo, Novi Sad, Serbia.
- [22] Tomović, R. (1979), Ograničenja formalne teorije upravljanja sistemima, Univerzitet u Beogradu, Beograd, Serbia.
- [23] Vukmirović, N. (2006), Savremeno preduzetništvo – Nauka o veštinama poslovnog uspeha, Ekonomski fakultet, Banja Luka, B&H.
- [24] Zelenović, D. (2011), Inteligentno privređivanje – Osnovna tehnologija ozbiljnog društva, Prometej, Novi Sad, Serbia.