RESTRUCTURING AN ENTERPRISE BY IMPLEMENTING
A COMPLEX INFORMATION SYSTEM AS A TOOL FOR SECURING
ITS FURTHER PROSPERITY

Samer Khouri, Katarína Kyseľová, Denisa Al-Zabidi
The Technical University of Košice

Abstract

World and regional economies are getting into a permanent crisis in the end of this decade. Ever increasing demands are imposed on management of enterprises. Because of globalization, technological business and law, the complexity of enterprise activities is increasing. The ability of enterprises to break through to the market is mainly dependant on their flexibility to react to outer influences and on the ability to adapt to changing demands and conditions of outer environment. One of the prerequisites for ensuring efficiency of an enterprise is the effective use of information. Therefore information systems with the task to produce quality and relevant information for the control processes are being implemented.

Keywords: information system, restructuring, enterprise crisis.

Introduction

The present economy is mainly characterized by globalization and accelerating dynamics of markets and production cycles. The terms of deliveries are getting shorter, competition is increasing, the complexity of services is getting greater and control of relations with customers is changing. The enterprises that do not continuously focus on implementation of modern information technologies are getting into competitive disadvantage and they can easily find themselves in crisis. The importance of information systems that are becoming a key factor of success is therefore increasing.

Research problem, novelty and relevance: The article is focused on realization of survey showing how to restructure a selected enterprise by means of implementation of information system, thus ensuring its prosperity, because its present information system is becoming a brake for its further development in environment with growing demands on control of production and other processes. The enterprise is entering the crisis phase and to ensure its further prosperity, restructuring has become inevitable.

Research subject: The chosen enterprise operates in the field of production of plastic components. Its main focus is on design and production of forms, thermoplastic injection and assembly of plastic parts that are mainly supplied to automotive companies and other enterprises. It has been active in Slovak Republic since 2005 and it is a production plant of a foreign company.

Research aim: The aim of the research is to show the possibility of restructuring of an enterprise by implementation of a complex information system, thus ensuring its further prosperity.

Research objectives: the following objectives are set to fulfil the set aim:

• identification of crisis situation of the enterprise,
• analysis of methods of solution of enterprise crisis,
• investigation into needs and conditions of the enterprise,
• selection of information system with regard to needs and conditions of the given enterprise,
• securing of smooth course of implementation of the selected information system,
• evaluation of results after implementation of the information system.

Theoretical framework of the research

Identification of critical situation at an enterprise

From the point of view of long term statistical data, every enterprise will sooner or later get into crisis. The existence of an enterprise is not linear and usually is nearing towards the theoretical model of life cycle of an enterprise that is shown in Figure 1.
Sometimes, even in the phase of growth, several kinds of crises may appear that can cause liquidation of the enterprise. The diagram of Howard Grosier given in Figure 2 shows the dependence of crises on the scale and age of an enterprise. Individual crises can cause interruption of growth of the enterprise and there are shown means for overcoming them (Mihok, Vidová, 2006a).

In the beginning phase of growth of an enterprise, it has to overcome the initial critical situations in control. The key to their overcoming is the creativity of owners or individual partners of the enterprise.

In the next phase, the enterprise is middle-scale and demands division of work in control. Demands on individuality of different operations are growing and therefore special control and executive operations are needed (Mihok, Vidová, 2006b).

The enterprise is further developing and managers possess big decision making rights. Here emerges the possibility of their misuse or the conflict of interests. This can be overcome by permanent supervision. The process of supervision has to be delegated in a way so that the whole control and executive apparatus of the enterprise could be supervised (Mihok, Jahnatek, 2007).

**Crisis as a process**

The process approach treats crisis in a broad scope of time and space. Crises are perceived as a result of long period of incubation and they emerge openly under the influence of a starting event. It is the last moment of continual cumulative process of enterprise faults. Therefore the analogy of crisis should potentially go far ahead of the crisis phase. The understanding of the whole context of crisis in the process approach from assumptions towards re-

---

**Figure 1.** The lifecycle of an enterprise (Mihok, Vidová, 2006a)

**Figure 2.** Phases of growth of an enterprise – modified diagram of Howard Grosier (Mihok, Vidová, 2006b)
results has to be primarily based on systematic analysis of crises. The systematic analysis allows revealing dynamics of crises while looking for their historic roots and predicts possible consequences for the enterprise. From the process view of crises, all three aspects are present in formation of enterprise crises:

- **Enterprise deficiencies**, which represent some underground stream and ground for crises.
- **Development of management ignorance**, which makes the managers blind to the presence of organizational deficiencies.
- **The starting event of crisis**.

The first two aspects – organizational deficiencies and management ignorance represent combination of two parallel cumulative processes. The main idea is to demonstrate the fact that organizational deficiencies lead, if they are not noticed, toward vulnerability of the enterprise. Such ignorance is not intentional, but results from limited ability of people to perceive when deficiency in an enterprise grows into its vulnerability.

The process approach to crises shows another perspective and leads toward the fact that the starting event should be perceived as a factor that reveals the existing dynamics of the crisis. In other words, in the process approach the starting event is only perceived as amplifier of the process that has begun long time ago and is only accelerating the crisis and making it more intense (Alexandrova, Khouri, 2009).

**The foundations of ERP system**

Enterprise Resource Planning (ERP) denotes a software system that is set to support and automate processes in an organization. It is usually a broad package that covers areas of production, distribution, human resources management, project control, salaries and accounting. Companies usually do not use all the modules, only those that they need. ERP promises to integrate all sections and operations of a company into a unified software package. In the last years, the definition of ERP is getting broader with new terms and areas. Modules like Customer Relationship Management or Supply Chain Management or Business Intelligence are becoming a part of an ERP system (Al-Zabidi, 2006).

**Research methodology**

**Solution of enterprise crises**

The present course shows that crises are not structured and are of unplanned and unexpected nature, what demands systematic approach to control in order for their control to be applied with the aim to document their complexity (Cehlár et al., 2007a).

Enterprises in general are trying to adapt to inner and outer changes, while amount and frequency of different types of changes is on increase. In general, it is possible to divide the causes of critical phenomena into two basic groups (see Figure 3):

- external causes,
- internal causes.

![Figure 3. Causes of origin of critical states in enterprises (Cehlár et al., 2007a)](image)

**Development of proposals of crisis handling strategies**

The characteristic feature and the key moment of difficult process of revitalization of an enterprise lie in its beginning. It is necessary to identify in what state the enterprise during revitalization processes finds itself (Khouri, 2009).

The lifecycle of the enterprise due to different influences does not have to go through phases of the model lifecycle. Individual phases are specific and they have different length and all this influences formulation of strategy applied in the planned restructuring. This allows the enterprise to transfer from one lifecycle into another (see Figure 1).

After successful realization of restructuring, the enterprise is becoming a new subject that has gone through one of the following strategies:

- prosperity,
- revitalization,
- resuscitation.

All strategies of restructuring are highly demanding financially and only in the strategy of prosperity own financial sources can be used.

**The strategy of prosperity**

The strategy of prosperity can be applied in the period of development of the enterprise before getting to the climax period, that is, in the phase of bloom and stabilization. This is the most progressive strategy of restructuring that demands the most complex and diffi-
cult decision on its application. The enterprise that decides to apply the strategy of prosperity thinks about leaving of the present progressive development and application of a new, often risky, path of further development and existence of the enterprise. This form of restructuring is applied by world class enterprises.

Every wave of lifecycle has to be left in the correct moment before its absolute climax, sooner than the wave will take the enterprise back. It is the decision to leave the present positive development of the enterprise and to decide about new path bound with high risk. This high risk should be compensated by high probability of obtaining even higher prosperity. The risk of the decision can be compensated only by a new well prepared business plan or a plan based on competitive ability (Cehlár et al., 2007b).

Such highly risky decision can be taken only by a very qualified, self confident and professional management that is the bearer of strategy, its guaranty and realization of the whole radical change.

**Strategy of revitalization**

The strategy of revitalization is applied in the time of the biggest need for restructuring of an enterprise. The aim of application of this strategy is to save the enterprise from decadence, bankruptcy and liquidation. The strategy of revitalization is usually applied during period of crisis of the enterprise.

Implementation of the strategy allows radical and full revitalization of the enterprise that exhibits all degenerative symptoms of non-prosperous enterprise. Decreasing income, losses, bad liquidity, growing debts, negative cash flow, etc. can be considered as characteristic symptoms.

By application of strategy of revitalization, it is necessary to apply the following principles:

- Change of high level leadership that is fully or partly responsible for current situation.
- Quality business plan has to be competitive, with successful production program and high added value for customers.
- Radical and conceptual control of expenses.
- Centralization of control and accurate leadership.
- Fast and comprehensible decisions.
- Radical measures leading to improvement of financial situation of the enterprise. Here occurs claiming of debts, rational sale of unneeded property, etc.
- Stop in investment operations.
- Re-evaluation of research and development with the aim to make production and technological innovations more efficient.
- Rationalization of production and work in the enterprise.
- Development and strengthening of innovative environment.
- High motivation of all employees towards changes.
- Intensification of work with customers, suppliers and public to gain stronger support.

Successfully executed strategy of revitalization can ensure the growth of prosperity of the enterprise, although in lower level than the strategy of prosperity.

**The strategy of resuscitation**

The strategy of resuscitation is applied in the phase of termination of an enterprise. It should save the enterprise from total liquidation. The strategy of resuscitation allows the enterprise to begin a new phase that is continuation of productive, market or personal operation of the previous enterprise. The strategy of resuscitation has the following several rules:

- Appointment of absolutely new high level leadership of the enterprise.
- Quality business plan aimed at competitive ability and successful production program with high value for customers, which is bound with production program of the bankrupt enterprise.
- Centralization of control, mainly in the phase of development and foundation of the enterprise.
- Well thought-out, fast and comprehensible decisions.
- Continuous care of efficient use of business resources.
- Intensification of work with customers, suppliers and public to gain greater trust and support from outer environment of the enterprise (Cehlar et al., 2005).

The strategy of resuscitation can generate only such level of prosperity that is similar to prosperity obtained in the phase of stabilization of enterprise’s lifecycle. In practice, it is assumed that after restructuring based on the strategy of resuscitation, different variants of restructuring with features of strategy of prosperity or revitalization will follow.

**Situation in the model enterprise before incorporation of information system**

The company used extensive Excel spreadsheets for control of the main production processes after startup of its factory. Accounting and invoices were secured by an external organization, which supplied the company with a simple accounting system. Its functionality was however limited and it was not possible to expand it. The system also served for evidence of stock supplies and entering of sales and purchase orders.

This solution did not fulfill the criteria for control of the quickly expanding company. By expansion
of production, its deficiencies became even more pronounced, and the management of the concern decided to equip the Slovak factory with a complex information system. The needs of the company exceeded the possibilities of the software it was using.

The company evaluated different competitive ERP systems and the best one with complex, broad functions and user-friendly interface was selected. Decision was made also based upon name of the given ERP system, which is also used by many suppliers and customers of the model company. This reality can be used for better communication of companies and online connection of different activities.

This solution was also inevitable because of the reason that the previous information system has become brake for further development of the company with increasing demands on production or control and other processes. The company needed to incorporate ERP that will further be able to accommodate new modules as the company grows. The ERP system selected by the company fulfils all the demands as it is a complex information system that covers all the basic processes in the company:

- finances;
- accounting;
- sales;
- distribution;
- supplies.

The solution consisting of several separate systems would not be an acceptable alternative. The suitable solution of having one system for all economic, production and planning processes with no need for complicated interconnection was found.

The parent company is also going to incorporate this ERP system. Incorporation of the information system in Slovakia was a pilot project that was intended to evaluate its abilities in practice. The decision to install the system in all its factories is self-explanatory. It should happen in near future (www.sap.com/sk/pdf/crw.pdf).

Evaluation of needs and conditions of the enterprise

In case the production factory would have only one customer, the planning of production would become simple. However, when the portfolio is broad with manufacturers of interior plastics used in automobiles, situation is radically changing. Most of the suppliers of automotive industry work with just in time system, which is very demanding on organization and production planning. The factory has nearly one hundred codes of items and each of them comes in many colours. With such quantity of products, it is not possible to use manufacturing control with Excel spreadsheets. The new ERP system was expected to help to fulfil strict criteria for supplies for automotive industry.

The same applies for stock management. The company cannot work without readers of bar codes that are planned to be integrated into ERP system to simplify the management of stock supplies. The previous system did not allow this.

In the near future, the company is planning to interconnect certain modules with information system of its customers, what will increase efficiency of production planning even further. This reality was decisive for selection of the mentioned ERP system. It is the most common ERP system in the world that is used by companies in automotive industry across the world and their strategic partners. Mutual interconnection of processes will be simpler and more efficient.

Because it is an integrated ERP system, it is needed to enter data only once and it is immediately visible in all modules. Management of the company expected to decrease human errors. Accurate and timely information will allow increase in controlling and will enable more efficient production planning with elimination of stock supplies, connected with efficient use of human resources, thus decreasing operational costs (Khouri, 2004).

The course of implementation of ERP system

In the first phase, the company has decided to install five basic modules: financial accounting, controlling, properties management, sales, distribution and material management. The system was expanded by stock control module during its installation. Expansion by further modules of manufacturing, quality control and CRM is planned. The installation was very fast and it lasted for only 11 weeks. It was one of the fastest installations of the selected ERP system in Slovakia.

With installation of the information system, all production processes and information flows in the enterprise cleared out. It is necessary to input all data only once and it is possible to share them easily, because all modules are automatically interconnected. Management has better overview of all operations in individual plants and segments.

Research results

Implementation of the mentioned ERP system brought immediate decrease of operational costs of the enterprise by 20%. Main savings occurred in production, consumption of materials and administrative operations. Mere reality that different sections do fewer phone calls to each other already brings savings. The needed information that was gathered before interpersonally can now be quickly and easily obtained.
Installation of the information system was inevitable for ensuring further prosperity of the observed enterprise, because it wants to increase the number of employees, expand production and internal processes. ERP system has made the situation for management much easier, because it allowed to begin with basic modules with further addition of modules as the whole enterprise will grow.

References
Vertinant ilgalaikio laikotarpio statistinių duomenų požiūriu, kiekvieną įmonę anksčiau ar vėliau ištiks krizė.
