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TRENDS IN IMPLEMENTATION OF RISK MANAGEMENT IN SMEs

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Abstract: *In the globalized world, the rapid development of technology, increasing competitive advantage, the managerial activities are conducted most often uncertain, decisions are made under conditions of risk. In the small and medium innovative enterprises, decisional problem is more complex, depending on the strategy adopted, obtaining several results, dependent on the dynamics of environmental conditions. In this paper are presented the principles and methods of valuation and risk modeling underlying implementation of risk management in any SME, since the risk assessment results and success strategies decisively influence decisions taken at macro and microeconomic level.*

Keywords: *risk management, modelling, small and medium enterprise, production systems*

1. INTRODUCTION

Current society in transformation, knowledge-based, requires finding and implementing some new methods to maintain the competitive advantage and implicit performance standards, in order to adapt to dynamic environmental conditions, in the context of globalization.

The business environment influenced by a lot of factors with event random uncertain requires that many companies, SMEs to integrate risk management into decision-making process in order to increase their competitive advantage. An ineffective risk management can result from economic point of view, both the bankruptcy of many companies on the market, but also at socio-economic and serious environmental problems. For example, through an adequate risk management, many famous industrial accidents (Chernobyl disaster) caused by a number of factors and events could have been prevented. If global risks are not effectively addressed, their social, economic and political fallouts could be far-reaching, as exemplified by the continuing impacts of the financial crisis of 2007-2008, [7].

The results of risk assessment are decisive influence for the decisions and the success adopted strategies at the macro and microeconomic level [1]. Given that risks are inherent in and occurring in all aspects of business management, SMEs should carry out a review regular and continuous of risk management business.

In implementing risk management activities occur most often specific problems and difficulties [5]. Thus, even if the concepts are explained Risk Management, sometimes they are difficult to understand because risk management requires an interdisciplinary approach involving the knowledge from several related fields: economic, technical, sociological or political. Sometimes the message receivers are not specialists in the field and underestimate the significance of risk management. Risk manager must explain not only the risks and consequences of their methods of prevention, but also to emphasize the importance for risk management organization, positive consequences of the application of risk management policies. The theory is that a manager can have one of three attitudes towards risk: risk assumption, risk rejection or indifference to risk [1]. The need the corresponding approach to business risk level is, in the current round, little aware of small and medium entrepreneurs in Romania. Complex theoretical apparatus required of such an approach is still rather strong preserve of companies or financial institutions, but the small and medium businesses that are mostly of Romanian firms [2, 7]. The implementation of the risk management in SMEs is essential, given the importance of entrepreneurial business development, resulted from the recent studies [*Romanian Entrepreneurship Barometer 2013 EY Romania*]. According to the recorded data, shows the following:

- In the OECD countries, SMEs represent 99% of companies and two-thirds of employees.
- In Romania, SMEs contribute by 66% of the total number of employees of private companies.
- Also, these companies creates jobs at a rate of two times higher than the larger companies in the European Union 85% of all job growth between 2002 to 2010 being due to the SMEs.
- At the same time, we see that Romanian entrepreneurs experiencing significant difficulties: 88% of them find it difficult or very difficult access to finance, 94% wanting the predictability fiscal and regulatory environment, and 59% believe that Romanian mentalities and values do not support the entrepreneurship.

All over the world increased interest in entrepreneurial activity, business is so modeled and SMEs play a decisive role in reviving the overall economy. In terms of positive sentiment towards entrepreneurs, Romania is ranked 18 of 21 countries surveyed in the Entrepreneurship Barometer (Romanian and G20 edition), with only 35% of answers (Figure1).

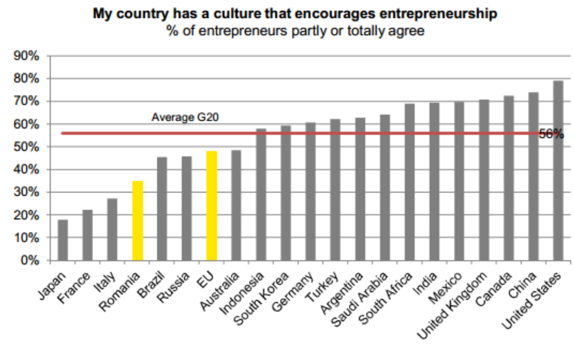

Fig. 1 The entrepreneurial culture [Source: EY Entrepreneurs Speak Out: Romanian Entrepreneurship Barometer and EY G20 Entrepreneurship Barometer]

As risks are inherent, and arise in all aspects of managing a business, SMEs need to conduct a regular and ongoing review of Business Risk Management. This review can be built around Critical Success Factors (CSF) and then expanded to include the risks attaching to those CSFs. CSFs normally contain the key internal and external issues or activities that impact business performance and they should be a mixture of those common to all the businesses in your industry or service sector and those specifically associated with your SME business [*SME Toolkit, „Basel II for SMEs”*].

2. THE RISK MANAGEMENT PROCESS

2.1 Principles. A risk is an event or condition that, if it occurs, could have a positive or negative effect on a project's objectives. Risk Management is the process of identifying, assessing, responding to, monitoring and controlling, and reporting risks [*EPLC Practices Guide – Risk management*].

The implementation of risk management in any organization need to consider the principles according to which the risk management is viewed as integrated part of decision making and organizational processes creator added value, dynamic, iterative and adaptable to change [*ANSI/PMI 99-001-2004, (2004)*]. The risk management addresses the uncertainty in a way well structured, opportune, based on the best the available information, considering human and cultural factors for continual improvement of the organization.

In accordance with [*AS/NZS 4360:2001 – Risk management*], the implementation of risk management is carried out by the following steps: setting goals; risk identification; risk analysis; assessing and prioritizing risks; risk treatment; communication and consultation; monitoring and review. *ISO/DIS 31000:2008* is a standard governing the issue recently emerged risks. International Organization for Standardization identified a number of principles of risk management in business, [3].

3. CASE STUDY. RISK MANAGEMENT PLAN

The activity of identifying of specific components of business risk and ways for managing them has become the need of considering the evolution of Romanian economy, in the current conditions, imposed by the globalization and the internationalization of business firms.

The company analyzed is part of a large industrial group. It is an industrial concern, the market leader in performance operating systems and logistic equipment. Today is a modern company with multiple locations worldwide, all aiming to achieve quality products becoming the preferred partner of customers. The company also provides ancillary services to made products, consisting of a team of experienced engineers. The fundamental concept of the company is to achieve a higher level of quality and service, developing and delivering solutions that fit the needs and expectations of the market.

The company's vision is to achieve a global coverage and to be the market leader. All projects are possible only with the performance of the implementation of complex solutions and quality.

Company objectives are: development of quality products and services; compliance with the dates of delivery; customer loyalty; increase in turnover and profit; developing a good communication between departments of the company; adapting production to market requirements; increase efficiency equipment; increasing the level of training of human resources; compliance with environmental conditions imposed; compliance with of regulations and legislation. To analyze the performance of the company are used as size comparison: the turnover, the number of employees, previous period, the quality of products and services. The target values of these indicators for measuring performance (KPI) are based on strategic objectives and involve both management staff as well as the employees in achieving their. Benefits of using KPIs are not maximized because only 35% of enterprises use in all departments and only 23% design and use in correlation the various areas of activity indicators of the company. Using performance measurement indicators is recommended in terms of risk management.

To highlight the company's financial business development analysis we selected several indicators of balance, in Figure 2.

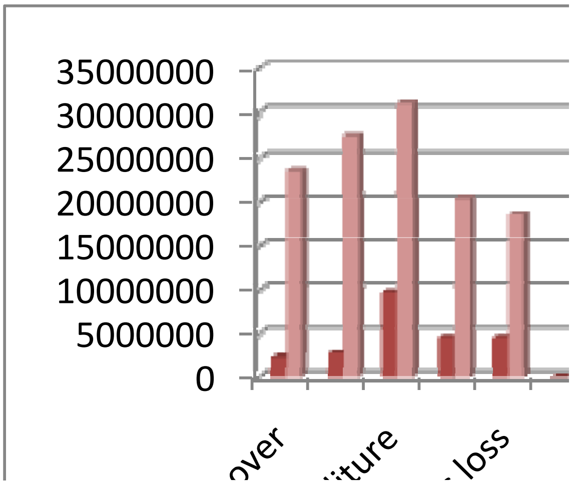

Fig. 2 Financial evolution of the company's

3.1 Resources allocated. The organization should develop practical means to allocate adequate resources for risk management, this will be considered: people, skills, experience and competences; resources required for each step in the risk management process; documented processes and procedures; information systems and knowledge management. Gantt chart is a technique often used for scheduling projects (such as project and resource allocation to achieve adequate bond risk management). Gantt charts are designed and implemented with success in operations with a high level of repeats. The activities of several components can be combined in a single graph showing the realization of the aggregate. The graph can show how different activities are performed concurrently to achieve a common goal.

Risk Management clarifies the objectives of the organization and commitment to risk management, specifying: links between risk management policy and other policies that target the enterprise; responsibilities for risk management; how are treated conflicts of interest; the degree of risk acceptance and risk aversion; the processes, methods and tools used for risk management; the resources available to help those responsible for risk management; the way in which risk management performance will be measured and carried; commitment to periodic review and verification policy and structure for risk management and continuous improvement.

Risk management policy should be communicated properly to all levels of the organization.

3.2 Risk identification. Assessment and risk modeling is a complex activity that requires multidisciplinary approaches in different branches of science or knowledge of the economic, technological, sociological or political. Risk assessment results and success strategies decisively influence decisions taken at macro and micro. Risk can be defined according to *ISO / IEC Guide 73: 2002* and *ISO/IEC CD2:2008* as the combination of the probability of an event and its consequences.

A difficult situation of the enterprise is characterized "by a serious lack important and progressive mastery obstacles and difficulties", which is caused, on the one hand, the inability of managers to manage effectively the company, and, on the other hand, its development in its economic context. It is important to note that the nature of the difficulties, but the frequency and intensity with which manifests are essential in characterizing such a situation. Difficult financial situation appears, therefore, that a situation likely to upset further work in terms of efficiency and effectiveness. The latter corresponds to reality "normal" enterprise, while plight is associated a reality "abnormal" of the same entity.

The main categories of risks in an enterprise are (Table 1): *financial risks* (interest rates, exchange rates, credits), *strategic risks* (competition, market demand), *operational risks* (regulations, culture, management) and *hazard risks* (employees, properties products, services).

Categories of risk in the company:

01. *The introduction of new products on the production line.* Concern intention of developing locations in Romania entails diversifying production by introducing the production line of products type prototype, which slows down the work of staff.
02. *Interdepartmental Communication.* Failure to company employees share information about the project on all departments involved.
03. *Failure to comply with the terms and conditions of the suppliers of products or services.* Failure to comply with contractual terms and conditions by suppliers failure to meet customer deadlines, possible problems in terms of quality products and services, loss of customer confidence with the company, etc.
04. *Customers.* Lack of optimal communication with customers may result in loss of future contracts, dissatisfaction meet the requirements
05. *The emergence of unforeseen production costs.* Due to the early phase in which the company, running costs of raising plants that have not been taken into account from the beginning costs, thus producing a temporary imbalance the budget.

3.3 Qualitative and quantitative risk analysis. In this section are qualitative and quantitative analyses of risk by assessing the impact of risk events on the project objectives and risk score calculation, [2, 6]. Score impact (I) are given in Table 2.

Table 2. Score impact

Level	Score	Description
Very low	1	Negligent impact. It is not possible to quantify the impact, which is very low.
Low	2	Minor impact on the project, such as less than 5% deviation from the program or project budget.
Moderate	4	Measurable impact on the project, such as deviations from 5-10% of the program or project budget.
Great	8	Significant impact on the project, such as deviations from 10 to 25% of the program or project budget.
Huge	16	Impact (catastrophic) on the project, such as more than 25% deviation from the program or project budget.

a. ***Qualitative analysis*** of risk by calculating the impact of risk is shown in the following:

Risk 1: I=0.4 - Impact of prototype development of type products is high because this activity requires the involvement of specialized personnel and its qualification on the type of product produced. As expected it is impossible to approximate the time of product development, which reduces manufacturing capacity type series from the production line, thus delaying delivery times for this cause blocking of cash flows.

Risk 2: I = 0.8 - Lack of communication between departments involved in the projects undertaken by the company has a very high impact; it may cause a breach of the terms of delivery, development of non-compliant, even leading to the loss of a customer.

Risk 3: I=0.8 - A high impact it has non terms and conditions by providers of products or services is because it involves the risk of being unable to meet the demand of customers, or deal with, but with delays, with low quality, or some shortcomings, which automatically leads to the possibility of non-compliance of contracts with clients, and loss of confidence and credibility.

Risk 4: I=0.8 - As in any company manufacturing activity expenses are occurring, impact can be considered very high as to produce a forecast budget imbalance.

Risk 5: I=0.4 - The client is a very important aspect to be taken into account permanently.

It is not enough a quality product at a fair price, or service made on time. Lack of proper and effective communication with customers, or bad communication, conflict, has a high impact because it leads to loss of customer confidence, the credibility of the company, and automatically to loss of customers and financial losses. Therefore it is necessary qualified personnel for this; it represents the company's image.

It is considered impact of risk (I):

0.05 = *Very low*
0.10 = Low
0.20 = *Moderate*
0.40 = *Great* / 0.80 = *Huge*

b. Q***uantitative analysis***, the likelihood (P) the risk and the risk impact are given in the Table 3 and Table 4.

Table 3. The likelihood (p) the risk

Level	Score	Description
Very low	1	Very low probability of occurrence; Risk monitoring is still required if certain circumstances can lead to a risk with a certain probability of occurrence during the project low
Low	2	Low probability of occurring based on current information available and risk triggering circumstances also have a low probability event.
Average	3	Average probability of occurrence, the risk is likely to occur.
Great	4	High probability of occurrence, based on the circumstances of the project.
Huge	5	High probability of occurrence and the circumstances of the risk occurring are very probable to manifest.

Risk Analysis Methodologies for the enterprise involves combining qualitative and quantitative techniques. Qualitative analysis techniques are used when there is insufficient data to allow the use of quantitative techniques that apply to more complex activities of the organization, [1, 2, 4].

Risks must be analyzed from two perspectives - the probability and the impact. Also, the risks inherent risks should be analyzed so that, before applying management actions, as well as residual risk remaining after implementation of management actions.

Risk can be defined - according to *ISO / IEC Guide 73: 2002* - as the combination of the probability of an event and its consequences.

The priority score is determined by the probability of occurrence score and impact of the risk score, with the relationship:

Priority Score = Probability Score x Impact Score

Table 4. Risk impact (quantitative analysis)

Risk Category / Event	**** (P)**	**Consequences impact**	**Risk Score (Px I)**
The introduction of new products on the production line	**0.9**	The delay deadlines of the other products.	**0.36**
Inter-departmental communication	**0.7**	The lack of interdepartmental communication can produce deviations from the terms of delivery, development of non-conforming products, leading even to the loss of a customer.	**0.56**
Failure to comply with the terms and conditions of the suppliers of products or services	**0.5**	Failure to meet the demand of customers, or deal with, but with delays, with reduced quality, or failings; Failure respect of contracts with clients, and loss of confidence and credibility.	**0.4**
The emergence of unforeseen production costs	**0.5**	Reducing income and deviation from the expected budget plan.	**0.4**
Customers	**0.1**	The loss of customer confidence, the credibility of the company, and automatically financial losses and loss of customers.	**0.04**

** Probability (P): Very unlikely = 0.10 / 0.30 = unlikely / 0.50 = Medium / 0.70 = Probable / 0.90 = Very Likely

The most important risks that must be treated it can be seen in Figure 3.

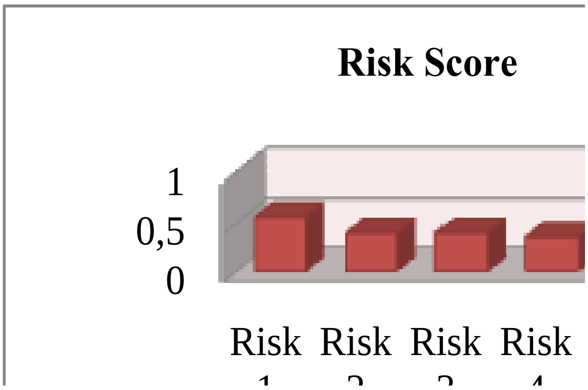

Fig. 3 Risks prioritization

The matrix scores of the priority are given below (Table 5).

Table 5. Risk matrix

Probability of occurrence	5	5	10	20	40	80
	4	4	8	16	32	64
	3	3	6	12	24	48
	2	2	4	8	16	32
	1	1	2	4	8	16
		1	2	4	8	16
	Impact					

Risk Management Plan contains actions that are applied to avoid, transfer or mitigation risk based on priorities. For each identified risk specified: probability score; score impact; priority score; preventive actions applied to reduce the likelihood of risk; contingency actions (corrective), applied to reduce the impact of emerging risks; data output and resources allocated for each type of action.

The first eight identified risks, in descending order of priority scores are follows: interdepartmental communication; failure to comply with the terms and conditions of the suppliers of products or services; the occurrence of unforeseen production costs; introduction of new products on the production line; customers; competition; provide inconsistent equipment; failure to client deadlines. After analyzing the risks, we can determine the best action for managing each risk. This involves consideration of the impact on business, the probability of occurrence and cost of control or risk reduction. When corrective actions have meaning, options include steps to reduce the potential risk transfer or risk insurance. In the process, we have a clear image of the relevant risks, as they are related to each other and how they can be managed on.

3.4 Preventive and corrective actions.

Preventive actions:

- *Risk 1:* Establish a team just type prototype; Separate funding of such projects;
- *Risk 2:* Implementation of rules for transmitting information;
- *Risk 3:* Conclusion of contracts with suppliers including specific contractual clauses regarding timeliness; The choice of suppliers / partners trust;
- *Risk 4:* Building a budget contingency reserve;
- *Risk 5:* Training with customer representatives, specialized training (for communication, sales).

Corrective actions:

- *Risk 1*: Schooling of team made up;
- *Risk 2*: Collection of information by a person involved;
- *Risk 3*: Solutions quick replacement of unsuitable suppliers;
- *Risk 4:* Rebalancing of the budget;
- *Risk 5*: Questioning their customer satisfaction for services received.

Also, implementing the monitoring and control plans, the risks situated in the high domain can be eliminated or minimized to a medium or low level.

It can be noticed that a problem of risk is difficult communication between staff which is part of Departments of Planning, Logistics and Design, in terms of achieving the command products received from customers. As a solution to improve the activity of permanent communication, of transmission of information between these departments and others, decided to re-parcel them under one Department of Planning. Another measure taken is to develop training programs and specialized trainings sites within the company.

Activity of the company is to manufacture systems and equipment logistics on industry, mostly for export. The company capacity is used 100% which shows a profitable business, which initially is continuously developing. This is the reason why the company management attracts more and more contracts, customers who use its services are renowned corporations abroad. Actions taken for the early detection of difficulties and risks that threaten the normal course of business enterprises and to determine their financial status, allowing measures to ensure their economic viability and contributes, of course, to avoid bankruptcy caused by poor management of material resources, financial, human and, not least, information.

4. CONCLUSION & ACKNOWLEDGMENT

Risk management is effective when it becomes part of the company culture and employees are interested through key performance indicators in implementation. Given that the negative consequences of risk are most common in business, must be analyzed and implemented effective methods of prevention and mitigation of these undesirable phenomena. Changes in production systems, business development led to the integration of risk management in modern management systems as "key factor" of economic development of any company. Management decisions involve risks that can conduct both behavioral change structures and results. Identifying and managing risks is a complex issue with implications for profit of any company.

Risk management can have positive effects that generate opportunities for earnings a firm or negative, leading to threats, losses. Any type of business is vulnerable to losses due to risks arising from uncontrolled. Risk management should be an ongoing and evolving throughout the organization, which are implemented systematically, and methodically all actions to eliminate or reduce the risks associated with the activities past, present and especially the future of the organization.

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