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A Proposal for a Risk Assessment Management in a Transport Company

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Abstract

Nowadays a prestigious and successful organisation is preoccupied on an efficient management. To identify the important aspects, the problematic situations and elements, managers should use more than one tool for the best solution and result. A periodic assessment represents a managerial necessity which describes all the sides of the company. This paper focused on a few assessment categories like organization structure, planning, transportation management, quality. Logistics Management controls and implements the efficiency of the services and customers demands. The paper shows an application and, in the end, the results of a logistic assessment in an international transport company. All the results of this assessment will be compared with the results of an applied method of occupational risk which was evaluated the same company. In the end the conclusions will lead to an efficient assessment management which embrace a better vision of the company.

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1. Introduction

An efficient assessment management includes a lot of assessment tools and methods and a periodic and qualitative evaluation. A feedback is always welcome and benefic in any company, representing the base for an efficient risk assessment.

People tend to anchor on their best estimate and then not adjust sufficiently when they try to estimate the associated uncertainty. Similar manifestations of overconfidence are clearly a serious problem in quantitative risk assessment (Glickman, & Gough, 2013).

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A strong definition of risk is the probability of loss or damage to human beings or assets. Risk assessment has become a challenge and an essential commitment in all the sectors and domains. Risk management includes at least the following three tasks: performing quantitative risk evaluation, determining measures to reduce risk, justifying an acceptable risk level (Li, 2014). Moreover, in this paper authors try to adopt a practitioner perspective, focusing on evaluating all the categories of the company. The main objective of this paper is to identify the possible risks, to define them, to try to decrease or better, to eliminate them and finally, to establish the company position. A promising future begins with small and sure steps, with more than one assessment and comparison inside the company.

2. Overview of risk management

Risk is present in numerous company activities and has been studied from many perspectives including strategy, finance, production; accounting and marketing, there are differences of opinion concerning its definition.

Lavastre et al. (2012) emphasize three elements to define a risk: the extent of loss (elements of loss), its importance (significance of loss) and its probability of appearance (associated uncertainty of loss). Another definition is that risk is “the probability of loss and the significance of that loss to the organization or individual”. On the other hand, risk is studied in the context of logistics/supply. Risks exist because of procurement market complexity as characterized by the shortage of suppliers, replacement products and technology. Also bearing a degree of responsibility are entry barriers such as logistics costs, complexity and monopoly or oligopoly market conditions for suppliers.

According to Lavastre et al. (2012) some studies develop a risk management process that breaks down into four generic steps:

- (i) Risk identification— this includes the location of risks, possible damage to the company and its partners, and the impact on the supply chain, organization and shareholders;
- (ii) Risk assessment— this involves determining the severity of risks, measuring the effect of risks through financial, production, logistics or trade performance, the probability of a risk becoming a reality and the potential extent of the loss;
- (iii) Risk monitoring and control — deals with control, containing and dominating risk using planned actions or reactions in the short, medium and long term, implementation of technical or prevention and protection measures, staff training, financial responses or risk sharing with partners, and the control indicators to monitor risk and the effectiveness of actions;
- (iv) Decision and implementation of risk management actions — includes strategies for risk management such as risk transfer, risk taking, risk elimination, risk reduction, and further analysis of individual risks.

An example of a strong risk in a transport company is the fatigue.

A wide range of organizational factors have been identified that can impact on fatigue in transportation, negatively or positively including:

- The cultural, regulatory and enforcement environments;
- The size of the company;
- The nature of the business (who/what is transported, where and when);
- The level of commitment to health and safety (the safety culture) in the company;
- The presence of safety management systems (SMS), including systems for non-punitive reporting of safety concerns;
- The nature and extent of supervision (in transport operations employees are typically mobile and can be out of contact with direct supervision for long periods of time);
- Remuneration practices (payment by the trip, by the hour, overtime rates, etc.);
- Knowledge about fatigue among staff at all levels in the organization; and for individual employees, their perceived quality of working and domestic life (Gander, Hartley, Powell, Cabon, Hitchcock, Mills, & Popkin, 2011).

3. A performed way of assessment management

The management is the base in all company activities, the key for success and prosperity. The assessment management has a lot of faces, dealing with a lot of instruments and methods.

According to Van Der Lei and Ligtoet (2015), in order to be a global hub and Europe's industrial cluster, the following values were defined (like a value tree):

- *Safety*: External safety -Health risks (Safety is generally recognized as an important value. However, health risks of people both inside and outside the company (number of injuries and / or deaths) is a general concern, not bound to specific modes of transportation as is external safety (which is safety to people and organizations outside the company).
- *Sustainability*: Clients- Transport- Processes (Sustainability: encompasses environmental impacts (emissions, discharges) and could be seen as another word for "clean". Sustainability is to be achieved both in the company's own operations, in related transport activities, as well as the activities of its clients. The strategic documents as well as some insights delivered by the risk department clearly indicated that reducing emissions, and decreasing the use of raw materials and energy as the focus of sustainability. However, sustainability appeared to be a difficult concept as it meant different things to different people: some of the asset managers concerned with structures also called sustainability the longevity of their assets. Although assets of higher quality generally lead to less time and energy spent on maintenance and replacement, we eventually moved the longevity aspect to societal value creation).
- *Accessibility*: Capacity- Availability (Accessibility: in short, this value is about the flow of goods. At first the synthesis tree read efficiency, as efficiency was recognized in the business. The debate was whether this was the best word: efficiency is nothing more than a goal at an acceptable cost).
- *Reputation*: Esthetics/ image- Entrepreneurial developer (Reputation: means a combination of esthetics and a positive image among customers, stakeholders and the press. More specifically the organization wants to be known and active as an entrepreneurial developer. Reputation provided most debate that is the result of a job done well. Furthermore, the reputation is a separate point of attention: it ensures the "license to operate" and especially the "license to grow").
- *Creation of societal value*: Maintenance- Longevity- Supply network value- Use of space (Creating of societal value: includes not only generating sufficient funds for the organization itself for continued operation (like return on investment, profitability), but also a broader goal to create value for clients, the surrounding region, and other stakeholders).

4. The risk assessment management proposal

The proposal of this paper is to assess the company categories which have an influence for the human resources, for the employees. The assessment was done in a transport company from Romania, named Mercur International, on 01.10.2015.

The authors composed a short questionnaire for every type of category, in Excel program, with the instructions below and completed by one of the company manager.

The study contains questions for every assessed part of the company. The assessment categories that were analyzed are: organization structures, planning, transportation management, distribution and warehousing, financial controls, quality, technologies. The questions should have a numerical answer in the box adjacent to each of the questions. The numerical answer is as follows:

Table 1 Defining codes

1-	Not developed
3-	Under development
5-	Developed and executed

When the box of every question has a valid score value of a 1, 3 or 5, the box containing the score will automatically turn color to equal the score value as identified above. The score for each tab will automatically calculate and this category score will automatically carry over to the Summary tab. The results of the assessment are included in Table 2 as follow:

Assessment categories	Category scores
Organization structure	37
Planning	68
Transportation management	71
Distribution and warehousing	77
Financial controls	49
Quality	33
Technologies	35
Total assessment score	370

As it is seen, the assessment category of the organization structure and the planning is developed and executed, that means the transport company has a strong beginning with clear objectives. The others assessment categories (transportation management, distribution and warehousing, financial controls, quality, technologies) are under development. This shows that in the company, could appear insignificant risks.

For a better vision of the risk assessment management in this company, the authors of this paper had investigated few months ago, the risks through another method, INCDPM Bucharest method (National Institute of Research and Development for Safety at Work).

Recent study and results from Cirjaliu et al. (2015) indicate that with this method, the risks are divided into categories, such as physical, chemical, mechanical, electrical, thermic, biological factors, and wrong actions and omissions (in the case of workers). There have been identified 31 risks, out of which 28 are above medium risk level (22 average level risks and 6 high level risks). Considering the sources of the identified risks, 35.5 % are factors from means of work, 12,9 % are factors from the work environment, 6.5 % are generated by workloads and 45.2 % are factors dependent on workers. Therefore, the worker and the work environment (as part of the work system) account for most of the factors that generate risks for drivers.

According to Moraru R. and Babut G. (2010) the quantification of risk severity in INCDPM method and the quantification of risk probability in INCDPM method is presented in table 3 and table 4.

Table 3 Quantification of risk severity in INCDPM method

Consequences	Severity of consequences	Value
Negligible	Minor; work incapacity of maximum 3 days	1
Small	Reversible consequences; temporary work incapacity of 3-45 days	2
Medium	Reversible consequences; temporary work incapacity of 45-180 days	3
High	Irreversible consequences, with diminution of work capacity to minimum 50%, individual being able to have professional activity	4
Severe	Irreversible consequences, with 100% diminution of work capacity, but with ability of self-service, ability to control the body and spatial orientation	5
Very severe	Irreversible consequences with complete loss of work capacity, self-service, ability to control the body and spatial orientation	6
Maximum		7

Death

Table 4 Quantification of risk probability in INCDPM method

Type of event	Occurrence frequency	Value
Extremely rare	$P > 10$ years	1
Very rare	$5 < P < 10$ years	2
Rare	$2 < P < 5$ years	3
Less often	$1 < P < 2$ years	4
Often	1 month $< P < 1$ year	5
Very often	$P < 1$ month	6

With a specific formula and way of calculate the level of the risks, the method in case considered that an acceptable risk level should be maximum 3.5. According to the authors of the method, those delimitations are suitable for any case in our country, Romania, in order to find quickly the occupational risks.

Global risk levels higher than 3.5 involve workplaces with unacceptable risks and need immediate efforts to increase security. The results of this study, with this method was that the global risk level for drivers at the transport company in case is 3.95, meaning that drivers are exposed to a few risks.

This method presentation combined with the author's proposal for risk assessment management in this transport company illustrates a better vision and evaluation of the possible risks and inconveniences.

Those possible risks that appeared in the company are shown in context of that assessed categories that are under development. The logistics assessment proposal has confirmed the existence of risks in our investigated company. For a better development, managers should decrease or eliminate the appeared risks.

The paper contains a useful tool for a risk assessment management, but in order to be more clear and correct, the assessment needs more than one tool, more than one method.

5. Conclusions

Nowadays, a lot of companies, small or big ones, put on first place the human resources, the well-being of their employees. For that aspect it is very important to have a feedback, to control all the activities. To have a good and benefic view of the company, it is necessary to make a periodic evaluation, assessment, for every organization categories.

This paper is embracing the assessment part and it is presenting an old method which had been applied. From the assessment part, in which it was made a logistic assessment for seven categories of the company, the position of the organization resulted to be under development. Therefore, this "under development" profile came with a few risks that were discover through another method which was applied before the present one.

The presentation of other method is necessary for having a better vision of the firm, for approving our evaluation and for having a strategic and performed way of work.

The tools and instruments for risks assessment are a lot and very important and useful for a qualitative evaluation.

The assessment in some words is the way to performance and prestige.

References

- Glickman, T. S., & Gough, M. (2013). *Readings in risk*. Routledge.
- Li, W. (2014). *Risk assessment of power systems: models, methods, and applications*. John Wiley & Sons.
- Lavastre, O., Gunasekaran, A., & Spalanzani, A. (2012). Supply chain risk management in French companies. *Decision Support Systems*, 52(4), 828-838.
- Gander, P., Hartley, L., Powell, D., Cabon, P., Hitchcock, E., Mills, A., & Popkin, S. (2011). Fatigue risk management: Organizational factors at the regulatory and industry/company level. *Accident Analysis & Prevention*, 43(2), 573-590.

- Van Der Lei, T. E., & Ligtvoet, A. (2015). Value-Focused Thinking: An Approach to Structure Company Values for Asset Risk Management. In *Proceedings of the 7th World Congress on Engineering Asset Management (WCEAM 2012)* (pp. 605-613). Springer International Publishing.
- Cirjaliu B., Boatca E.M., Gaureanu A., Weinschrott H., (2015) Application of Occupational Risk Assessment Methods in the Organization, *Proceedings of the MakeLearn and TIIM Joint International Conference*, p 1069-1076, online: <http://www.toknowpress.net/ISBN/978-961-6914-13-0/papers/ML15-208.pdf>.
- Moraru, R., Babut, G. (2010). Participatory risk assessment and management: a practical guide, Focus Publishing House, Petroșani.