



Short Communication

Risk Management in Oil and Gas Refineries

Amir Samimi

Ph.D. of Science in Chemical engineering, Process Engineer & Risk Specialist of Oil and Gas Refinery Company, Iran

GRAPHICAL ABSTRACT ABSTRACT



ARTICLE INFO

Article history:

Submitted: 2020-01-09

Revised: 2020-04-17

Accepted: 2020-04-27

Published: 2020-05-05

Manuscript ID: [PCBR-2004-1089](#)

KEYWORDS

Energy Industries,
Organization,
Perspective,
Process,
Risk Management

This study examines why risk management is required in the energy industry. The variability of competitive laws in the world of business and energy has been highlighted as a major policy strategy in many countries. The rapid growth of technology, increasing risk ability, and risk in global markets and increasing changes in customer needs have been put new product development teams under increasing pressure. In order to be successful in identifying opportunities and threats in the energy industry, the risks involved in this process must be identified and addressed. Organizational risk management allows the company to anticipate changes and uncertainties in addition to moving in the right direction and achieving the intended vision. The most effective way to increase the effectiveness of risk management in the organization is to develop it as a process in the set of support processes in the organization and determine the process owner for it that they are responsible for managing and facilitating risk in the organization and guiding business managers in this field. Forming risk management committees in the organization with the participation of managers and reporting to senior management about the risks ahead are other methods of process management in which the success rate has been highly evaluated.

© 2020 by SPC (Sami Publishing Company)

INTRODUCTION

Risk management is a process that aims to reduce the harmful effects of an activity through conscious action to anticipate unwanted events and plan to avoid them. Risk management can be thought a process of measuring or evaluating risk and then designing strategies for risk management [1-3]. Overall, the strategies used include transferring risk to other sectors,

avoiding risk, reducing the negative effects of risk and accepting a part or all of the consequences of a particular risk. In the meantime, if risk management is done regularly to identify potential problems and find solutions, it will easily complete other processes, including organization, planning, budgeting and cost control. The project manager who has been a pioneer in this field can largely

* Corresponding author: **A. Samimi**Tel number: +989134027005, E-mail: amirsamimi1161@gmail.comDOI: [10.33945/SAMI/PCBR.2020.2.8](https://doi.org/10.33945/SAMI/PCBR.2020.2.8)

© 2020 by SPC (Sami Publishing Company)



prevent unexpected events from occurring during the lifetime of the project. Today, energy plays an important role in the human, economic and social development of societies. Energy has significant economic effects as one of the most important factors of production, goods and services required in the final consumption [4-6]. The statistics of the energy sector in the national accounts testify to this claim. One of the main challenges facing the country is out of control fluctuations in price and foreign exchange earnings from oil and gas sales due to Iran's strategic role in supplying global oil and gas and, on the other hand, Iran's dependence on oil and gas export revenue. Challenges and problems related to the coverage of huge investments in the oil and gas industries and ensuring stability in cash flows in the energy industry reveal the need to use risk

management tools. Understanding the available tools in the field of risk management in the energy industry and how they work can help solve these problems at a lower cost [7]. Fig. 1 shows indicative risk assessment for key downstream functions and operations. Risk management is a fascinating subject that has practical applications in all aspects of life and business. In today's challenging and turbulent business environment, exposure to environmental and domestic risks is inevitable. Given the many uncertainties surrounding project environments, it is imperative to use risk management in large, complex projects that increase the likelihood of achieving project goals. In this regard, one of the factors that is very important in the risk management process is the identification of project-related risks with the design approach of risk failure structure.

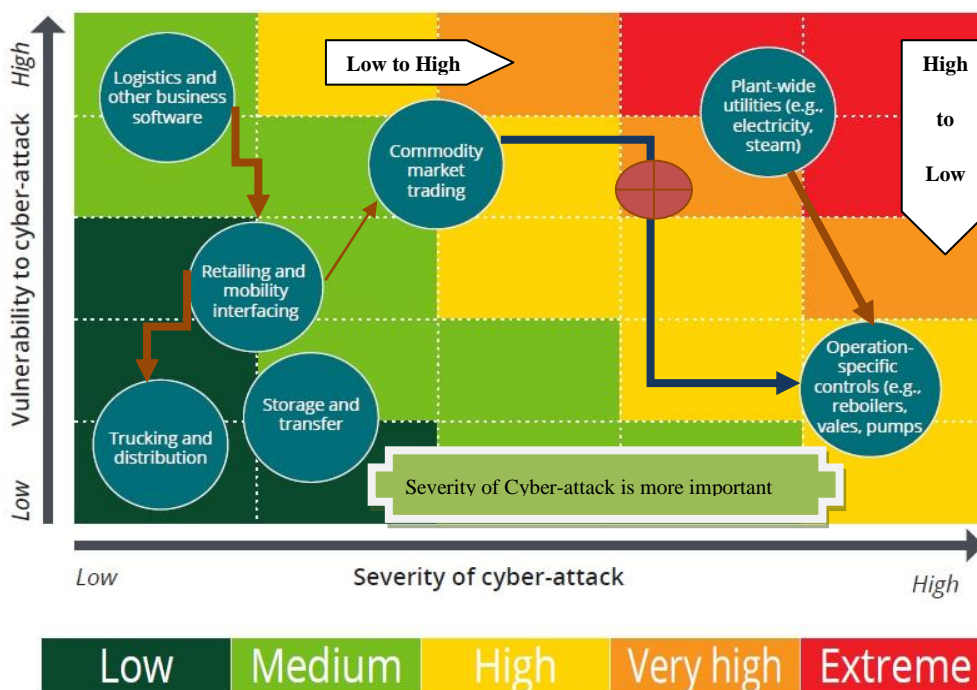


Fig. 1. Indicative risk assessment for key downstream functions and operations[8].

If the structure of risk failure is appropriate to the situation of the organization, the type of projects and the organizational structure, risk management studies in the areas of risk planning and identification should be done in a simpler, more effective and more reliable way.

Simultaneous organizational risks are the most important factor in the growth and use of opportunities for the organization and can be considered the most important threats to the survival of the organization. Therefore, organizational risk management has been attracted the attention of companies as one of the main topics of business analysis and leading managers have sought to establish and effective manage in global organizations.

At present, appropriate organizing has been considered for organizational risk management at significant number of companies [9, 10]. The basis of organizational risk management is based on the principle that the inherent duty of any organization is to create value for its shareholders and at the same time every company in its business environment is facing many uncertainties, senior director of the organization must be able to decide how much of this uncertainty he can accept with the goal of achieving the expected value for shareholders and how much he should give up. Uncertainties in the business environment can be seen as an opportunity or a threat. So organizational risks will typically pose threats and opportunities to the organization.

The process of organizational risk management has been established with the aim of being able to identify and effectively manage

the risks of uncertainty in the environment and within the organization. The risks of this industry are mostly low frequency and very high intensity.

Reviewing, improving safety standards, promoting safety education and culture and enhancing management control processes can serve as part of a risk management strategy to reduce the likelihood of loss. On the other hand, due to investments in industry and changes in the near and far environment that cause risks, as well as the pressures of laws, regulations and competitions, the importance of accountability of managers in relation to risk has increased.

Therefore, the application of effective risk management strategy in the industry is very important. Utilizing risk management strategies as a reliable process can bring the best returns in the industry. Therefore, risk management programs in all companies should be given priority [11].



Fig. 2. Risk Management

The effectiveness of organizational risk management is to repeat it

Organizational risk management can be a project or a process in an organization. Field research from leading organizations shows that facing risk management as a continuous process

in the organization and performing it more powerfully in the short term will greatly increase its effectiveness. Because organizational risk management courses increase the knowledge and experience gained in each course in the next course and increase its effectiveness index. Recent research shows that the effectiveness of risk management is greatly increased by repetition thus, the effectiveness index in repetitions three and more times in the year 92% and the ineffectiveness index due to its performance only once in the year 56% and its sudden experience in the organization has been reported to be about 89%. Effective organizational risk management requires the provision of new capabilities in the organization. Specifically, companies need to look at the environment beyond the traditional boundaries of their organizational structure. This means that at this time more weight should be given to environmental analysis and information than internal. It also means increasing the mechanism of learning from insights inside and outside the organization and increasing the industry to make decisions with richer information and implement approaches with more confidence. Managing the effectiveness of strategic risks goes far beyond preventing companies from failing to achieve their strategic goals and reveals to them the potential future benefits of an environment that results from volatility. Organizational risk management increases the competitiveness of the firm and is a stimulus for organizational creativity and innovation. These are all reasons why successful corporate executives have welcomed the strategic risk management process [12-15]. Thus, the concept

of organizational risk management is not limited to focusing on recognizing the reasons for the failure of a particular strategy but is a way to ensure organizational effectiveness. Today, we are opening up more organizations that have institutionalized and integrated organizational risk management in their strategic management cycle and their efforts in this regard seem to have paid off. According to a study by Deloitte's group, 61 percent of corporate executives now believe that the least benefit of their organizational risk management process has been ensure more strategic goals but the greatest benefit of risk management has been in protecting existing values and capabilities, rather than taking advantage of new opportunities. According to research, Reputation risk is the most important area of strategic risk. Today, technology is also considered as one of the important areas of strategic risk, so that more than 53% of organizations have stated that technology stimuli and its disruptions can threaten their current business model. Companies that do not effectively manage strategic risks and fail to internalize environmental capabilities will be potential victims of the future formed by their competitors. The traditional method of risk management was mainly based on the analysis of leading financial indicators and the focus on legislative changes, although attention to these issues still exists and is important but mere attention to financial risks is more about the past and reaction. An efficient risk management system focuses more on the risks posed by future business market disruptions, in addition to being a leader in the competition, the

organization is also a leader in dealing with business risks. Strategic risks are the risks that have the greatest impact on an organization's strategic decision, or as a result of which decisions are made. Therefore, they affect the current and future performance of the organization much more deeply and extensively compared to other types of risk.

Outsourcing business activities such as payroll, completing orders, etc. exacerbates the problem of units. Outsourcing can be risky. Companies that use outsiders for such tasks find that it is more difficult to get a full view of the risk profile. Of course, it should be noted that in some special cases and to take advantage of specific opportunities, outsourcing itself can be a strategic response to risk. But if not managed properly (due to a single approach) it may be more harmful than beneficial. Therefore, in order to solve this problem, some companies take part in some out-of-business activities, while others prepare stronger programs and risks to deal with these risks to make sure that their business partners go to Risk management standards are loyal.

CONCLUSION

In summary, organizational risk management allows the company to move in the right direction and achieve the intended vision without being hindered by events, changes and uncertainties. The most effective way to increase the effectiveness of risk management in the organization is to develop it as a process in the set of support processes in the organization and determine the process owner for it that they are responsible for managing and facilitating risk in

the organization and guiding business managers in this field. Forming risk management committees in the organization with the participation of managers and reporting to senior management about the risks ahead are other methods of process management in which the success rate has been highly evaluated. Deciding how to deal with organizational risk is usually a type of strategic decision making that is reflected in the day-to-day and ongoing decisions of senior management. Therefore, the deep understanding of senior managers about the risks ahead for the organization and its generalization in all managerial behaviors will be the key to the effectiveness of risk management. To achieve this feature, senior managers must be involved in the process of identifying, analyzing and quantifying risks. It should be noted that the mere analysis of risk by experts and its presentation to the senior director of risk management culture will not be institutionalized in their managerial behavior. The nature of risk management forces organizations and managers to take on the future role of risk-taking. Risk management can play a role in achieving this goal from a variety of perspectives, including "what should not happen." We must take action in strategic thinking, focusing on the success key factors in risk identification and evaluation and using the relative advantages of different risk management methods at any time, to use the initiatives of executive agents involved in risk management in every way. Avoiding waste of time and facilities, recognizing and choosing the best risk assessment and management method to maximize the objective function are affected

by independent variables, which are the limits of strategic freedom of action. Adopting a top risk management strategy is especially important in terms of performance. It is not possible to make key decisions in the industry without identifying and assessing potential risks. Therefore, familiarity with the methods of identifying potential risk factors and their proper use will be commensurate with the activity of an important factor in implementing and maintaining safety and environmental management systems and reducing their costs and the possibility of proper response and response in time. Makes risks possible. With the complexity of systems, it is not easy to identify error sources and variables that affect distribution, intensity, and uncertainty using traditional and conventional methods. Therefore, achieving a certain level of confidence

REFERENCES

- [1] M.Kh. Gazeev and N.A. Volynskaya, Sovremennye ogranicheniya i riski razvitiya gazovogo sektora ehkonomiki rossii Contemporary limitations and development risks in the gas sector of the Russian economy. *Bulletin of Higher Educational Institutions*, 3 (2012) 37-41.
- [2] A. Samimi, S. Zarinabadi and M. Setoudeh, Safety and Inspection for Preventing Fouling in Oil Exchangers. *International Journal of Basic and Applied science, Indonesia*, (2012) 429-434.
- [3] I.V. Osinovskaya, Prinyatie upravlencheskih reshenij v usloviyah riska (Management decision-making under risk). *Economy and Entrepreneurship*, 8 (2015) 767-770.
- [4] D. Osabutey, G. Obro-Adibo, W. Agbodohu and P. Kumi, Analysis of risk management practices in the oil and gas industry in Ghana. Case study of Tema Oil Refinery (TOR). *European journal of business and management*, 5 (2013)
- [5] J.M. Pollock, RISK MANAGEMENT FOR BLACK SWAN RISKS: PLANNING FOR NUCLEAR

and determining the uncertain performance of the system requires the use of new evaluation methods. Today, risk management is a central part of management, as many of managers' major decisions are made within the framework of risk management. Risk assessment is a risk management tool that can be used to examine the potential for risks and decide on investments to reduce them. Due to the vastness of the oil and gas industry, the huge volume of capital, the pervasive risks and the large number of people working in these industries have always been the focus of attention of safety professionals and stakeholders. It takes place.

CONFLICTS OF INTEREST

No conflict of interest was declared by the author.

- CATASTROPHE, FRACKING PROBLEMS, AND OTHER ENVIRONMENTAL DISASTERS. *CONN. INS. LJ*, 1 (2008) 2-3.
- [6] D.A. Yuryevich, K.M. Yakovlevich and K.P. Mikhaylovich, Optimization of finances into regional energy. *Экономика региона*, (2014)
- [7] D. Mohammadnazar and A. Samimi, Necessities of Studying HSE Management Position and Role in Iran Oil Industry. *Journal of Chemical Reviews*, 1 (2019) 252-259.
- [8] A. Slaughter, P. Zonneveld and T. Shattuck, Refining at risk: Securing downstream assets from cybersecurity threats. *Deloitte Insights, New York, NY, USA, Tech. Rep., Nov*, (2017)
- [9] A. Trujillo-Ponce, R. Samaniego-Medina and C. Cardone-Riportella, Examining what best explains corporate credit risk: accounting-based versus market-based models. *Journal of Business Economics and Management*, 15 (2014) 253-276.
- [10] A. Domnikov, P. Khomenko and G. Chebotareva, A risk-oriented approach to capital management at a power generation company in

- Russia. *WIT Transactions on Ecology and the Environment*, 1 (2014) 13-24.
- [11] A. Domnikov, G. Chebotareva, P. Khomenko and M. Khodorovsky, Risk-oriented approach to long-term sustainability management for oil and gas companies in the course of implementation of investment projects. *WIT Transactions on Ecology and the Environment*, 192 (2015) 275-284.
- [12] A. Domnikov, G. Chebotareva and M. Khodorovsky, Systematic approach to diagnosis lending risks in project finance. *Audit and Finance analyses*, 2 (2013) 114-119.
- [13] O. Vasicek, Credit portfolio models: Loan portfolio value. *RISK-LONDON-RISK MAGAZINE LIMITED-*, 15 (2002) 160-162.
- [14] A. Samimi, S. Zarinabadi, A. Bozorgian, A. Amosoltani, M.S. Tarkesh Esfahani and K. Kavousi, Advances of Membrane Technology in Acid Gas Removal in Industries. *Progress in Chemical and Biochemical Research*, (2020) 46-54.
- [15] A. Samimi, Risk Management in Information Technology, *Progress in Chemical and Biochemical Research*, 3 (2) (2020), 130-134

HOW TO CITE THIS ARTICLE

Samimi.A, Risk Management in Oil and Gas Refineries, *Prog. Chem. Biochem. Res.* 2020, 3(2), 140-146

DOI: [10.33945/SAMI/PCBR.2020.2.8](https://doi.org/10.33945/SAMI/PCBR.2020.2.8)

URL: http://www.pcbiochemres.com/article_107090.html

