

Business Process Management approach for effective Professional Risk Management: A case study

Najat Toufah

Assistant Professor
Hassan II university
FSJES Ain Chock Casablanca

Abstract- Nowadays firms are facing a huge pressure due to the current regulation to secure the employees' health and security. The stakeholders' awareness regarding the professional risk management has increased account being taken of the benefit of industrial accidents prevention, which are both connected directly to corporate strategic lines aimed to maintaining firm sustainability. Professional risks affect significantly not only employees' health and security but also firms' profitability. Professional risks management constitutes a primary condition to sustain the firm's sustainable performance. In this paper we shed light on the benefit of the professional risk management and how industrial accident prevention can affect positively the firms' sustainability. The aim is to explain how professional risks management can generate an improvement of firm's performance. At the same line of thought, it is to analyze how business process modeling and management can be used as a tool facilitating the professional risk management, from the risk identification, analysis and control to the industrial accidents prevention. Risk notation and categorization is the main step, particularly identified risks require different approaches and aren't treated equally, for this purpose we develop a model allowing risk categorization and notation to guide the risk managers to handle adequately any identified risk. In order to properly address this particular issue, our research is illustrated with a real case study. Actually, we present the result of professional risk analysis mission conducted in our intervention research showcased within industrial textile firm. The result highlights how business process modeling lead to identify, analyze and manage effectively the professional risks and how it has led to obviate any possible risks by addressing adequately the sources of danger, for the last point, we conclude with an analysis aiming at risks' notation and categorization for developing adequate preventive and remedial actions leading to reducing the risk or danger occurrence and hence ensuring process optimization.

Keywords: process modeling, process management, professional risk management, process optimization

1. INTRODUCTION

Professional risk management (PRM) is widely required to conform enter alia to regulation standards and is all the more beneficial for sustaining companies' performance enhancement (Guido J.L, S. Farné and G. Vitrano, 2022). Admittedly it is an imposition by the regulation, but many other stakeholders impel firms to implement measures to save and protect any participant health and security that are directly or indirectly involved in performing production processes or any of its tasks. For controlling and protecting workers' health, as well as to ensure their safety and security which affect mainly their productivity, it is recommended to implement effective business process management. The development of the professional risk management approach is still little knowledge about it utility in the enhancement of firms' performance.

The International organization standards in it chapter ISO 31000 linked to risk management (ISO 2018), sheds light on the importance of business process management to advocate the professional risk management. This standard has mainly contributed to improving the understanding of the professional risk management and emphasized the possible benefits that firms' can gain in consequence.

In this paper, we analyze the role of the business process management and how it leads to address the professional risk identification and management. It should be noted that the primary step to trigger is the technical monitoring mission which aims to understand the operational process behaviors leading to identify where, how, by whom and what tools are used for performing tasks. Then, the analysis steps take place to identify possible risks for the purpose of developing remedial and preventive actions to mitigate and/ or to eliminate the sources of risks and dangers. Indeed, it is worth underlining that the risk management is not restricted especially to the operational process at the tactical or operational level but must be applied at all levels and in all functions across the organization. It comes from the development in the top level of the detailed instructional procedures, which provide a guidance and workflow description. Obviously, it is to check consistently the accordance of the established practices to how process is driven in the operational level and then identify the areas of improvement with respect to these procedures.

To address this subject, we present in the first section the ISO 31000 standards for professional risk management through examining the eight principles guiding the professional risk management. For the second section, is it dedicated to BPM approach analysis linked to risk management. The risk categorization and notation is examined in the third section with focus on the organizational model developed for this purpose. For the last section, an empirical study is presented to illustrate the steps to follow to effective professional risk management and hence business process optimization and improvement.

2. LITERATURE REVIEW

2.1. Professional risk management: ISO 31000 standard

Professional risk management is applicable for all companies regardless their line of business, size and location, all firms are called upon to respect the regulation and hence protect their employees from any danger that might affect their safety or health during the working-time (ISO, 2009). Professional risks are a part of doing business (Brandon-Jones and al., 2014). To remain the course, firms are in rush to manage professional risks. This is a challenging situation for any company that seeks to ensure its production structure compliance with the current regulation and implicitly securing their sustainability (Gordon et al., 2009).

ISO draft international standard 31000 on effective risk management principles, and provides an analysis in form of guideline showing how it can affect directly the firms' objectives achievement and assets. This helps organizations not only to shed light on the threats associated to professional risks but also identifying the areas of performance that warrant special attention (SU et al., 2019). ISO 31000 standard comes up with many principles that should be considered in the PRM mission with the focus on managing business processes. To be effective, the risk process management should be more than an approach or mission to conduct within corporates, but it is a culture to set, a value to share with all and every one inside the workplace, it requires a real involvement of all users. It is for this, we present here after eight principles to consider while managing professional risks (ISO, 2018):

Integrated: The professional risk management should cover all areas across the company. The aim is to analyze all possible danger situations linked to the move of physical flow, human move and then the common possible risk over the workplace.

Structured and comprehensive: the risk management should be structured and seen as a process with guidelines and enclose proper procedures for an effective performing and to be more comprehensive for all users involved.

Customized: of course each company is unique in terms of workplace organization, employees' skills and behaviors, workplace architecture, machines and tools, storage organization and many other specificities that are directly affecting business process design and management. Thus, each firm must model the process of risk management regarding its specificities in order to be effective and reach its objectives in consequence (De Olivia and al., 2021).

Inclusive: for the achievement of anticipated results of PRM management mission, it is highly recommended involving stakeholders in the preparatory and implementation phases to better share their knowledge and vision. The aim is to be comprehensive and hence specific, all of the firms' workers know for which objectives this mission took place and what steps to follow to make this effective.

Dynamic: this risk management mission is not a punctual mission; it is continuously over time. Risks emerge, change and shift within organization are frequent also is case of process adjustment, new machinery or tools are used, new standard or procedure, all of that changes will give rise to new risks and must be investigated thoroughly and need further exploration to analyze the possible new risks.

Best available information: of course any process performing requires specific information to be correctly executed. For this, PRM is seen as a process and to be effective, organization should provide the right and necessary information when and where it is needed.

Human and cultural factors: this is the main pillar to success the risk management mission; culture and the human factors are as important as the techniques used to identify and manage professional risks. Firms should share their visions and goals for which this PRM is conducted, and involve employees in all the phases of this mission. Human behavior and beliefs are critical to admit change and so meet the goals of the firm.

Continuous improvement: This mission of PRM is a never-ending loop; each arrival point constitutes the departure point for the next PRM mission. Firms are called to improving their processes continually to secure continuous performance improvement.

Following these eight principles, firms can adequately conduct the mission of PRM and so to address properly any possible risks or danger that might affect firms' results.

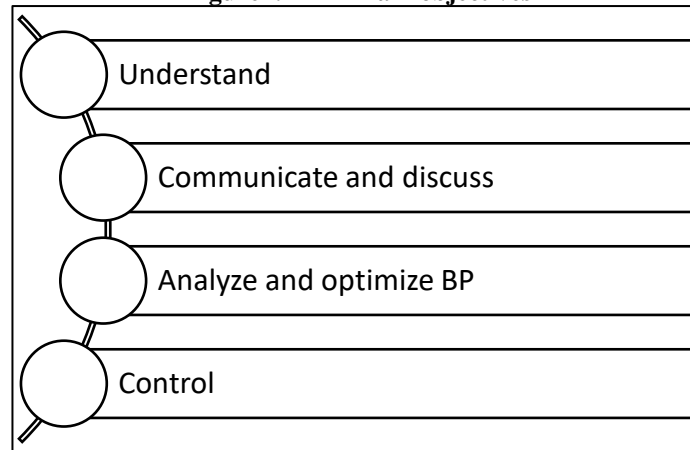
The next point sheds light on the benefits of the business process management approach to facilitate the run of the PRM mission. In what follow, we will analyze the business process management principles, objectives and how it can generate a basis for conducting the PRM properly.

2.2. Business process management for professional risks management

BPM tool is advocated for any organization. The BPM is more than a tool that can lead to develop and create process in formal way, but it is a culture to set, a new manner to fix steps to accomplishing any tasks linked to business processes (Jaime A. Plamla-Mendoza, K. Neailey, 2015). The aim is to identify not only where the tasks will be performed and by whom but also how; it is to fix the tools required for performing these tasks, hence the adequate BPM implementation provides process users with the right information where and when it is needed allowing process analysts to identify the possible dangers that users may face while performing their attributed function.

The business process management rely on the business process modeling that provides a clear overview of the business process functioning, its main contribution is to ensure available information where and when it is needed leading to support the complex process of decision-making (Curtis et al., 1992), (H. Al-Sabri, M. Al-Mashari, 2017). We can therefore say that one of the major benefits is the available information on time when and where it is needed. The main milestone is to define the objectives behind the BP Modeling implementation; the figure below shows the main objectives to BPM implementation:

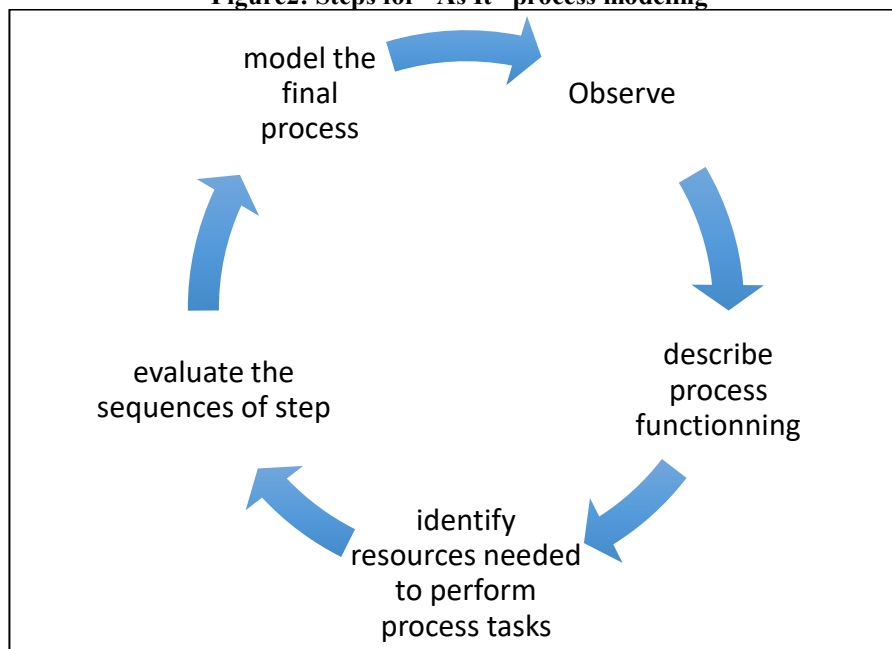
Figure1: BPM main objectives



BPM allows firms to better understand process architecture and behaviors; the level of detail incorporated is related to the fixed objectives and what is the information required to evaluate the process performance. Obviously, firm set the Business process modeling not only to communicate, understand it business process but mostly to analyze the process functioning and fix the improvement areas to secure process optimization (M. West, 2013).

Business process modeling can allow a deep analysis of process structure and the means leading to performing it. The main steps for business process modeling linked to professional risk management are represented in the figure 2 here after.

Figure2: Steps for “As It” process modeling



The analysis of the selected process aims to identify, analyze not only the process performing but also to examine the work conditions and the possible danger which result, especially, from the tools used in performing process and how appropriate are the personal protective equipment (PPE) used. Here after the step to follow to professional risk analysis using the business process approach:

- 1- Observe the step to follow to accomplish all tasks leading to perform the process
- 2- Fix and analyze the move of the employees to pick up the raw material, or any other move from workstations to another (interim store, storage place, rest area).
- 3- Analyze the workers’ behavior while using tools or machines in each step while performing business processes
- 4- Analyze the adequacy of the personal protective equipment used in each steep
- 5- Analyze the security means used in the workplace

In order to improve process functioning, an optimization mission is launched and many adjustments are proposed to prevent the industrial accident while performing process. The process optimization is not linked only to improve process functioning performance but aims to identify and act on the source of danger for ensuring and sustaining employees’ safety and security over time.

Business process modeling is considered as the best practice allowing a deep understanding, communicating, analyzing and controlling all firms’ activities around its business processes (Wenhong, Y. Alex Tung, 1999). It can be used for many objectives,

in this study the use of this business process modeling and management aimed to understand and analyze the workplace organization and work conditions allowing the detection whenever it is possible the danger and risks facing employees during their working time (Guido J.L, S. Farné and G. Vitrano, 2022).

This business process management implementation goes beyond the objective to understanding, communicating and making available information or data but it aims to provide the user with the right information to understand the current state “as it” process for rapid decision making and hence effective “to be” process rethinking. In fine, it constitutes the in puts for the process of decision-making. All these advantages of the business process modeling facilitate the run of the improvement mission and ensure thanks to other tool integration as Deming wheels “PDCA” to address the improvement areas properly from the planning, analyzing to developing remedial or preventive action and hence achieving the risk reduction or elimination.

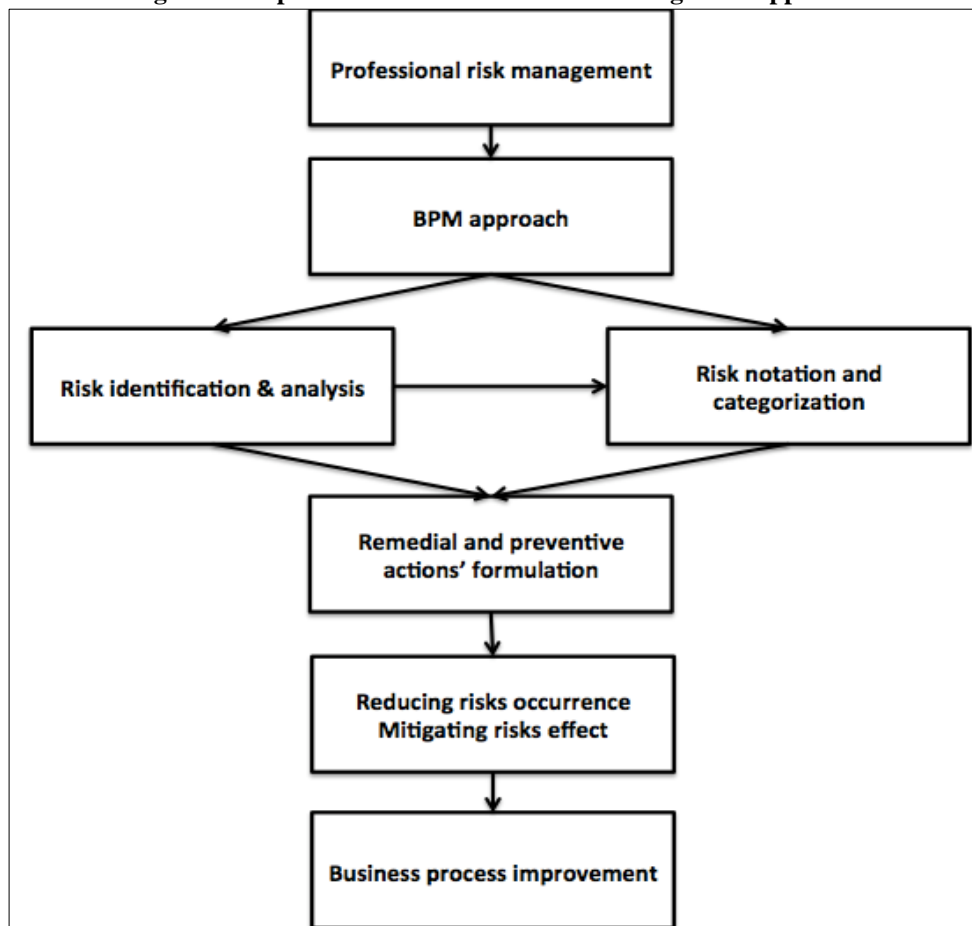
Effective PRM affects mainly firm performance mostly organizational and financial performance, mainly if it is adequately managed leads to value creation (Nitya P. Singh, Paul C. Hong 2020). Many empirical findings confirm the positive effect of enterprise risk management (ERM) on firm performance. The link between risk management and firm performance enhancement has been amply demonstrated, it was best addressed by Gordon et al., 2009, (Goodwin and Seow, 2002), several measures were developed to check the links of an ERM implementation on firm performance (M. F. Malik, M. Zaman, S. Buckby, 2020). These studies reflect the positive effect of an ERM regarding many lines of business. In the same line of thought, Lechner, Gatzert 2018 find ERM is positively associated with firm performance. Other authors indicate that successful business activity is based on many factors and they link it for instance to corporate governance practices and risk reporting. For Panaretou 2014, he confirms the effect of traditional ERM on firm value.

Implementing risk management practices helps firms to improve decision-making process and capital allocation. Of course, risk management is linked to many business lines. It is beneficial for sustaining firm growth and to securing its competitiveness at the condition that is effective to commit all participants and meet their expectations. (J. Jia, M. E. Bradbury, 2020) sheds light on best practices for risk management generate value by alleviating the problem of information asymmetry and lead to better organizational performance. All previously mentioned studies are in the same line and all confirm the effective risk management effect firm performance positively irrespective of the means and methods used for this purpose. The main pillar is the use in this regards adequate practices for corporate risk governance and reporting that allow proactive risk management.

3. METHODOLOGY

To bring to light our analysis which is intended to professional risk management, a case study is presented here after to provide a better picture of the operationalizing of the risk management mission with means of the business process management approach. To summarize our approach, the figure 3 below represents the value of BPM implementation to success the corporate PRM and hence effective process improvement.

Figure 3: Steps to follow for effective PRM using BPM approach

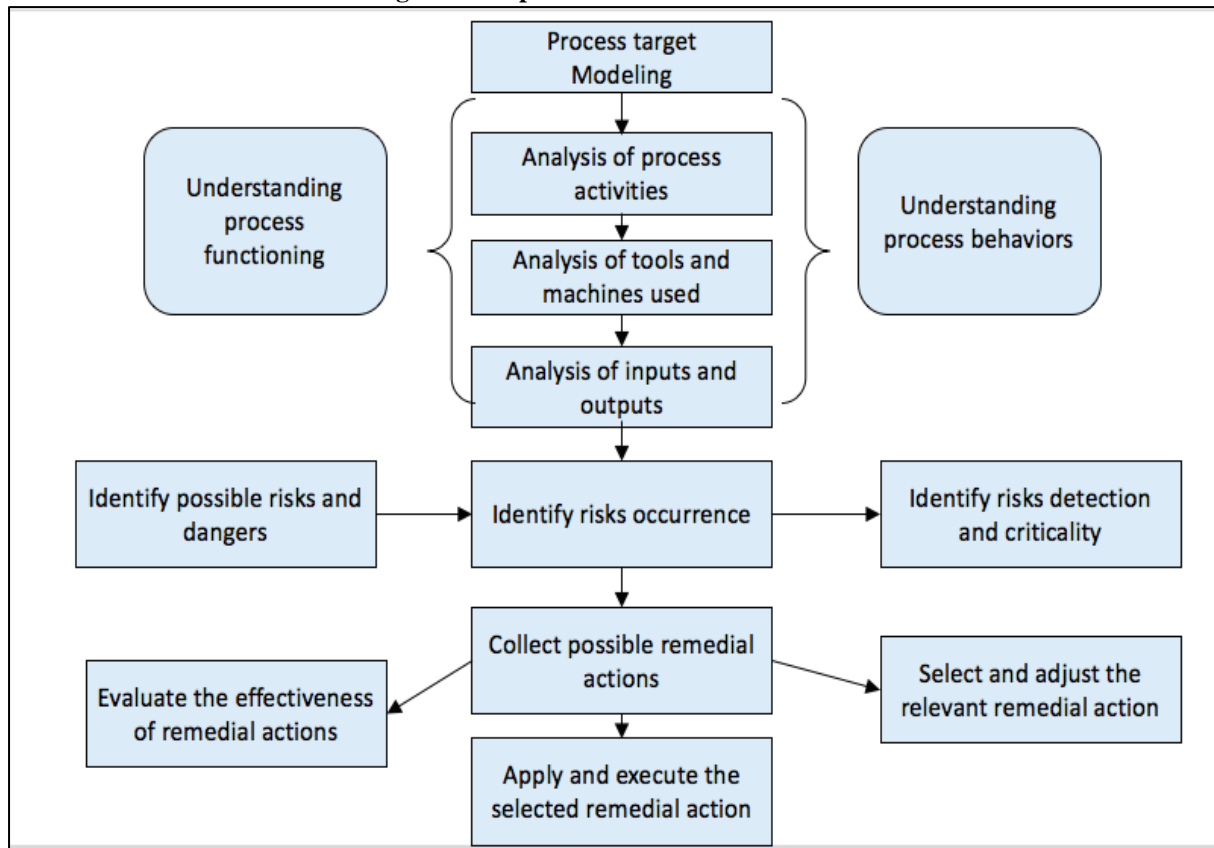


3.1. Professional risk management through business process management:

It should be noted that whatever the size, location and the business line, all businesses are involved in this professional risk management to comply with the stakeholders’ requirements specifically the regulation’s ones (ISO, 2009). The aim of this case study is to better illustrate the steps to follow for PRM. The specific results achieved can therefore not directly applicable for other companies or even for other departments within the firm subject of this mission. For this, the PRM mission should be tailored for each business process, thus, it is recommended to begin the process all over again taking into consideration business process organization, tools and means (informational, physical and human). It is worth understanding machines functioning and human behaviors while performing their assigned tasks to make relevant decisions and hence to achieve reliable results.

For the purpose of risk management especially professional risks, we describe the sequence steps that are taken for reliable results and effective professional risk identification and management. It is to highlight that our steps figured on the figure 4 are built on learning upon both the ISO 31000 standard and the Business process modeling and management approaches.

Figure 4: Steps to follow for effective PRM



Business process modeling is the departure point. The figure above describes in its first part the aim of Business process modeling which allows deep process understanding and analysis. The prior phase for business process modeling is to fix the objective for which this process modeling has been carried, and then observe the process functioning and behavior in the real life to check how the tasks are performing and how is the workspace organization, how tools are used and stored and how machines are monitored. The purpose is to identify any possible danger and risk facing users while they are executing their assigned tasks, without neglecting the necessity to check the existence and use of appropriate personal protective equipment. It is to check also if the workplace is equipped with adequate fire extinguishers and emergency exit.

It is worth following the steps in the order displayed in the figure 3. And each area should be analyzed separately, in the fact that each phase is unique with its specific process, procedures, worker competencies and tools or equipment used to perform its tasks. It is necessary to understand the process step, means and work-condition to better identify and analyze the possible dangers or risks allowing the adequate process optimization by providing appropriate solutions leading to mitigate or eliminate the source of danger.

Figure 5 below represents the five steps to professional risk management:

Figure 5: Process of professional risk identification and analysis

The first step is the work place selection or the process selection; is it recalled that each process is unique and should be analyzed carefully and separately. For the second step it is dedicated to the observation stage: it serves to only understand the process performing steps (number of questions are raised as where, when, for what purpose, by whom and using what means and how). The issue here is not to criticize or to teach workers, but only to check the process performing and the consistent of the real world process to the processes and procedures described in firm's quality manual. Then the third step which aims to assess the workplace organization analyze the move of worker; the aim is to identify any possible danger facing worker linked to their workspace, move and equipment used. And do not forget to check the use of the personal protective equipment that can mitigate the level of risk or the occurrence of dangerous situation.

The fourth and fifth steps: risk identification, evaluation and categorization: the fourth stage is crucial for analyzing carefully the identified risks, it is to check first the nature of risk, human, material or technical linked to machine or external factors that are linked to the workspace organization. Once risks are analyzed, comes the stage of risks evaluation and categorization. The aim is to fix the condition under which the danger occurs and their frequency. Then it is to indicate the level of danger and the seriousness of risks (for instance major; medium or low). Several actions are foreseen in order to the removal or mitigation of identified risks that pose potential health, safety hazard or for what this professional risk mission has took place.

Risk evaluation requires a multi and cross-analysis (material, human, external factor, personal protective equipment), level of its occurrence (high, medium, low, rare), nature of harm and danger for workers if it cause death, injury or no notable danger to workers) then scoring the risks using weighting calculating method and based on the assessment we grade the risk as major, medium or low risk. Regarding the risks categorization, we identify if the identified risk necessitates immediate action or it necessitate only a permanent monitoring and controlling.

The sixth step: the proposal of remedial actions to improve the process functioning and to mitigate or eliminate the danger and risk as far as possible. For all type of dangers, whatever their score we propose remedial actions. But special focus on the risk which notation is major and necessitate immediate action, for the risks that are seen as medium or low, with low occurrence or rare, we propose solution with deadline to correct them. For the last stage, encompasses the assessment stage aiming to controlling the relevance of the remedial measures implemented in order to check if any adjustment is required before final acceptance. Once actions are validated, new process would be developed and changes are recorded. It should be considered as the starting point of the future risk analysis mission, it is what might be termed in continuous improvement;

3.2. Risk identification, categorization and notation

Methodology developed for risk identification:

The special feature of our approach is its ability to combine in many of its levels the BPM and risks management best practices. This cross-analysis enables us to identify the major factors contributing to risk occurrence, then identified risks are ranked according to enter alia the potential impact on human, property, the probability of their occurrence, it is to highlight that several measures are developed to treat identified risks but some are for preventing risks or for mitigating risk effect on workers' health and safety (use of PPE) (Andersson, Menckel, 1995). Without this risk analysis it will be unreliable risk notation and enhance the likelihood of professional risk management failure.

Case study: Industrial firm "Textile"

Our paper provides a structural action to better analyze process outcome and to pinpoint the areas where improvements could be made for the purpose of enhancing global performance through professional risk management.

To approach our motivation and experiment the suggested methodology of PRM. The following is our intervention research, which aims to advocate the importance of the developed approach on PRM.

It must be noted, that this mission is conducted at the presence of the health, safety, environment and quality committee members (HSEQ). The aim is to provide us with any data regarding the process functioning since the last PRM mission or to provide us with the necessary information to check the conformance of physical support to operational process.. Also, their presence is crucial in the final step of this mission, called the closing meeting aiming to present the main decisions made and analyze the feasibility of proposed actions. This is a way to commit the HSEQ members in the process of correcting no-conformities and to set with them the deadlines for implementing the approved remedial actions in the real world.

The table bellow represents the main results of the professional risk analysis and management within an industrial firm operating in the textile sector. It shows only some examples of dangerous situation or risks for some working areas, and we provide real solution proposed to eliminate or mitigate the effect of identified risks and dangers.

Table 1: Identified risks: analysis and remedial actions proposed

Risk identification	Risk identified	Description	Level of risk	Main measures to mitigate the identified risks
Common risk	Risk of falls from height Electric risk shock	<ul style="list-style-type: none"> ▪ Stairs without handrails may expose workers to particularly severe risks to their health and safety. ▪ Many hazardous products exist in the central electrical cabinet; electrical cables are not protected from foreign objects. ▪ Power cord is pulled and broken present a danger of fire or electrical shock. 	Medium to major Major	<ul style="list-style-type: none"> ➤ Place a handrail over the scales ➤ Release the electrical cabinet from any foreign product. ➤ Take action to remove deficiency, consult electrician to remove and replace the broken cord.
Workplace risk	Workers' safety Fire hazard	<p>Neither traffic lanes are traced nor the emergency exit which should be different from the usual exit.</p> <p>The cutting and the ironing areas aren't equipped with the fire extinguishers. The iron rest are not available on the station or ironing board.</p>	Medium to major Major Major to medium	<p>Plan the emergency escape routes all over the plant levels.</p> <p>Consult certified enterprise to put in place adequate fire extinguishers</p> <p>Put in place the ironing rest</p>
Storage area Raw Material	Risk of injury and fire	<p>Storage is equipped with the fire extinguishers but are inaccessible;</p> <p>Potential falling objects (heavy product on the up level in storage area)</p>	Major Medium	<p>Take actions for releasing and facilitating the access to extinguishers in case of need.</p> <p>Organize the storage area in the conformance with the storage standard heavy and large products on the lower shelves.</p>
Storage area of Chemical products	Danger of spillage and falls	Possible seepage of chemical Waste of chemicals and oil in the surface generate a risk of potential reaction and slippery floor that may cause workers' footing unstable	Major	<p>Provide appropriate accessories for controlled removal of chemicals from their containers. Wearing safety shoes and protective gloves is necessary.</p> <p>Place in this area special waste containers for chemicals; garbage with specific color dedicated for chemical and oils waste and plan a periodic cleaning and housekeeping.</p>

At the closing meeting, a report is submitted to the HSEQ members, and the results are presented and explained; this is an occasion for exchanging and sharing experiences. To do that it is imperative to take a long hard look at the risk identified and to analyze with the committee members HSEQ the main solutions, their feasibility; mostly solution that requires an investment that needs top management approval. The aim is to control the effectiveness of proposed actions and possible process adjustments or provide further details to their effective implementation. It is common that our team assist companies in special accompaniment mission; to implement the solutions and train employees for the new structure established or the use of new tools. It is worth highlighting that the presence of workers in the process of decision-making is required, also a training session for all workers is advocated to reinforce their commitment to share companies value.

The professional risk management mission should be planned at any time firm change its processes or in case of the purchase of new machines, all affect the process functioning. If no significant change this mission should be planned once a year. To sheds light on how professional risk management can affect the firms’ performance, the table presented here after depict these links:

Table 2: Effect of identified professional risks on firm’s performance

Risks	Description
1 Leakage (water leak)	Irrationally use and management of water resources generate additional expenses and jeopardize the availability of water: affect financial social and environmental performance. Risk of slipping generate risks of accidents and hence workers absence.
2 Low labor knowledge: inappropriate use of machines or tools	Untrained staff = waste of time generates low labor productivity and increase the risk of error and non conformities occurrence: affect social and financial performance.
3 Fire extinguisher lack	In case of fire it affects: Worker safety (human damage) , damage property And air pollution (real cost to society and the economy) Production shutdown: affect financial, social and environmental performance.
4 Storage of large or heavy products on the top shelves	Worker safety, damage property High picking time and necessitate appropriate handling tools: affects financial and social performance.

At the same line of concern, it is to analyze the nature of risks identified in the professional risks management mission, of course when analyzing danger, it means the contact point between human and material generating danger either humans or material damage, but in some cases some dangerous situation result from irrational human behavior, inappropriate process or uncomprehensive procedures, thus for some risky situation the solution it is simply to train workers. Any human damage affects the corporate social and financial performance because of the disruption of flow and shutdown of production that generate negative effect on firm productivity. In addition, any event of fire, leakage or any irrational use of energy affects directly the environmental and financial performance and impliedly the firms’ social performance. The risks with high occurrence necessitate immediate action. Nonetheless, it is important to highlight that any level, damage affecting process performing or labor productivity has negative impact on financial firm performance and consequently leads to the failure to achieve the firms’ objectives.

CONCLUSION

Risks management touched the principal levers for improvement in the approach of professional risk prevention. Firms are facing a huge pressure primarily from government and clients to conform to some standards aiming to labor health, safety and environment protection. Indeed, the client becomes more demanding and in some cases requires doing business with companies that provide a certificate guaranteeing their business conformity with the HSEQ concerns and comply with the internationally recognized standards.

However, it is possible that professional risks management result on the willingness of firms that are committed to adopt best practices to manage their business and are aware of the advantages of professional risk management on firms’ reputation and it benefit on firms’ sustainable performance.

The beneficial use of Business process management practices in the professional risks management mission has been seen in all stages of PRM mission from the risks identification, analysis to the remedial actions implementation. The human factor is a basic pillar for success. Workers should be involved in all stages and must be trained to better act and be part of problem solving not source of problem. But it is possible that firm promotes workers to share it value with good communication program and shares it vision with all workers especially by demonstrating actions aiming to labor health and safety care and provide better work conditions. Overall, PRM is imposed by the regulation or clients, but, it might result from the enterprise desire to protect and respond to its stakeholders’ requirement not only government but also employees and shareholders. As this professional risk management affects mainly firms’ performance it is worth including the professional risks management in the phases of the business process improvement mission that both lead to sustainable firms’ performance enhancement.

REFERENCES:

1. Andersson and Menckel, 1995, On the prevention of accidents and injuries. A comparative analysis of conceptual frameworks. *Accid.Anal. Prev.*27,757-768. [https://doi.org/10.1016/001-4575\(95\)00031-3](https://doi.org/10.1016/001-4575(95)00031-3).
2. Argyro Panaretou, 2014, Corporate risk management and firm value: evidence from the UK market, *The European Journal of Finance*, Vol 20, <https://doi.org/10.1080/1351847X.2013.766625>
3. Brandon-Jones, E,Squaire, B. Autry, C. W., Petersen, K. J. 2014. A contingent resource-based perspective of Supply chain resilience and robustness. *Journal of Supply Chain Management*, 50 (3), 55-73. <https://doi.org/10.1111/jscm.12050>.
4. Curtis, B. Kellner, M. I. Over, J., 1992, Process modeling, *Communication of the ACM*, Vol 35, No. 9,PP 75-90, <https://doi.org/10.1145/130994.130998>.

5. Gordon, L.A., Loeb, M.P., Tseng, C.y., 2009, Enterprise risk management and firm performance : a contingency perspective. *J. Account. Public Policy* 28, 301-327, <https://doi.org/10.1016/j.jaccpubpol.2009.06.006>.
6. Guido J.L, S. Farné and G. Vitrano, 2022, A holistic view and evaluation of health and safety at work: Enabling the assessment of the overall burden, *Safety science Journal*, 156, <https://doi.org/10.1016/j.ssci.2020.105900>.
7. Hamdan Al-Sabri, Majed Al-Mashari, 2017, Process-Oriented Requirements Engineering: User-Centric LORS Framework, *Journal of Software Engineering and Applications > Vol.10 No.2*, DOI: 10.4236/jsea.2017.102006.
8. ISO 31000: Risk Management: Principles and guidelines, International Organization for standardization-2009- ISO
9. Jaime A. Plama- Mendoza, Kevin Neailey, 2015, A business process re-design methodology to support supply chain integration: application in an Airline MRO Supply chain, *International journal of information management* , Vol 35,620-631, <https://doi.org/10.1016/j.ijinfomgt.2015.03.002>
10. Jenny Goodwin, Jean Lin Seow, 2002, The influence of corporate governance mechanisms on the quality of financial reporting and auditing: Perceptions of auditors and directors in Singapore, *Accounting & Finance journal*, <https://doi.org/10.1111/1467-629X.t01-1-00074>
11. Jing Jia , Michael E. Bradbury, 2020, Complying with best practice risk management committee guidance and performance, *Journal of contemporary Accounting & Economics*, Vol 16, <https://doi.org/10.1016/j.jcae.2020.100225>.
12. Michael West, Return On Process (ROP), 2013, Getting Real Performance Results from Process Improvement, 1st Edition, Auerbach Publications, ISB 9781439886397.
13. Muhammad Farhan Malik, Mahbub Zaman, Sherrena Buckby, 2020, *Journal of Contemporary Accounting and Economics*, <https://doi.org/10.1016/j.jcae.2019.100178>.
14. Nitya P. Singh, Paul C. Hong, 2020, Impact of strategic and operational risk management practices on firm performance: An empirical investigation, *European Management Journal* 38, 723-735, <https://doi.org/10.1016/j.emj.2020.03.003>
15. Philipp Lechner, Nadine Gatzert, 2018, Determinants and value of enterprise risk management: empirical evidence from Germany, *The European Journal of finance*, Vol 24, <https://doi.org/10.1080/1351847X.2017.1347100>.
16. Su, Y., Yang, s., Liu, K., Hua, K., Yao, Q., 2019. Developing a case-based reasoning model for safety accident pre-control and decision making in the construction industry. *Int. J. Environ. Public Health* 16. <https://doi/10.3390/ijerph16091511>.
17. Technical Committee ISO/TC 262, Risk management, ISO 31000: 2018
18. Ualison Rébula De Oliveira, Lilian Aparecida Neto , Poliana Aparecida Ferreira Abreu MSc., Vicente Apriiliano Fernandes, 2021, Risk management applied to the reverse logistics of solid waste, *Journal of cleaner production*, Vol 296, <https://doi.org/10.1016/j.jclepro.2021.126517>
19. Wenhong Luo, Y. Alex Tung, 1999, A framework for selecting business process modeling methods, *Industrial Management & Data Systems*, Vol 7: 312-319, DOI: 10.1108/02635579910262535.