

An inventory of risk management practices and culture in the public sector : a case study

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Abstract

This article aims to give a detailed view of Risk Management canvas in a public organization and observe how Covid 19 was an element that made questions arise on whether probabilistic methods in evaluating risks are still reliable. We are intending to understand the unique case of the national office of airports of Marrakech (ONDA), through a qualitative method with case study approach. Data analysis is based on direct interviews with four of the company's managers. We were able to get to a first level of understanding how Risk as a concept, is perceived in the Moroccan public sector. The findings show that ONDA is advanced in the matter of risk management practices and adopt the latest tool recommended by ISO 9001: 2015 standard. It however still uses a preventive approach with probabilistic methods that proved useless to face Covid 19 pandemic.

Keywords: Risk management culture, public sector, Covid 19, case study

I. INTRODUCTION

Public Establishments and Enterprises (EEP) are the first public investors ahead of the State. They represent decisive actors in the national economy, contribute considerably to the implementation of public policies. They allow the acceleration of the pace of economic and social development, the diversification of sources of growth and the improvement of living conditions for citizens. These missions have lately been challenged by the rise of new types of planning activities and events. We refer here to risk prevention or self-protection and self-insurance activities against different types of losses or risks more specifically starting from the 1960s. As for events, we could mention plenty of times in history where risk management was put to test and failed, for example, the wave of globalization that deepened the dependency of global supply chains on each other, financial scandals where companies were forced to check up on their control systems... Hence why companies were forced to transfer certain types of risk to insurance companies, considering it the main form of risk management after its emergence [1] developing therefore a certain culture of risk. In this regard, Morocco, among other countries, aims to improve the performance of its public body and the quality of service provided to users, through the continuous consolidation of their mode of governance and the reinforcement of their culture of risk. For a long time, the entrepreneur has always been defined as the one who took the risk of entrepreneurship, the one who risked his capital and who was remunerated for it. P. Drucker since 1973 warns against any culture that attempts to eliminate risks. Conferring to him, "trying to eradicate risks, even trying to reduce them... can lead to the ultimate of all risks: rigidity". He defines managerial decisions as risk-taking ones and even suggests that a strategy for innovation should be based on a clear acceptance of the risks of failure. It is common sense that risks are inherent in all kinds of business and a risk culture is how these risks are perceived and what position and practices take managers to face risks as they see fit [2]. This is also what justifies the subscription of companies to externalize their risk management knowing very well the importance of these practices.

Today, companies have the mission to assure a better performance in a riskier environment while maintaining a sustainable culture [3]. However, despite public enterprises being generally in a monopoly situation, the Moroccan industry remains largely dependent on imported raw materials and semi-finished products. This surely explains the stagnating the level of the overall value added rate which is 23% and the pronouncement of importation [4]. The key to overcome these challenges, companies should develop a strong culture of risk [2], [5], [6] through an even

stronger governance [7]. Risk management has come to the facade in many structures. Risk management refers to the process by which risks are identified, assessed, estimated, evaluated, treated and reported [8].

Risk management process takes form depending on the specialists' area. It is a contextual concept that depends on the manager's perception of risk also known as the risk culture. The risk manager could either be preventive, curative or choose the latest standards and select a risk and opportunity based approach [9]. However, it isn't always a matter of choice. There are types of risk that force a certain approach even when the culture adopted dictates otherwise. In this study, we chose to analyze the effect of Covid 19 pandemic on risk management practices and how it altered the culture of risk within the national office of airports in Marrakesh, one of the main organizations affected by the pandemic. The purpose is to reach a detailed view of Risk Management canvas in a public organization through a qualitative method. This case study's purpose is therefore, to get a head start into a deep understanding of how Risk as a concept is perceived in public sector.

We will start with a straight to the point literature review to get what is risk, what is a culture of risk and the different possible approaches and models. We will then go through a brief inventory of how risk is perceived in the Moroccan public sector to then present and discuss the results. All of this is to finally answer the questions: How is risk perceived in the national office of airports in Marrakesh? Did Covid 19 alter the risk culture within this organization?

II. LITERATURE REVIEW

A. *What is a risk culture?*

Before defining what risk culture is, it is primordial to know what the key concept actually refers to: Risk.

In theory, risk takes shape depending on the discipline and the context of the definition. One of these can be found in ISO/IEC Guide 73, which has remained since its appearance in 2002, the most common reference for defining the concept of risk. This document refers to risk as "the combination of the probability of an event and its consequences". In the context of companies, risks are identified and analyzed throughout the entire chain, starting from the supplier's supplier to the customer's customer.

The notion of risk is therefore multidimensional and blurred in its contours. Its amplitude through numerous studies makes it one of the most consumed issues in management studies. Risks can refer to any potential anomalies at any given stage of the journey of products from their production plant to the hands of the final consumer. They could then be considered as variables of internal or external uncertainties, or even environmental ones which reduce the predictability of the results. [10] outline three main components defining a risk: the extent of the loss, its importance, and its probability of occurrence. The risk could in extreme cases turn into a crisis. To avoid this, the company concerned should prepare its organization and therefore its responsiveness to adapt to an event that was probably expected yet whose consequences are not under control [11]. The authors use the following formula to evaluate the risk of any event called n from its probability of loss $[P(\text{loss}_n)]$ and the size of its loss $[L(\text{loss}_n)]$: $\text{Risk } n = P(\text{loss}_n) * L(\text{loss}_n)$.

Now that we know what risk is and how it is generally quoted, we can move on to analyzing what a culture of risk refers to and how many positions a manager could adopt in managing risks.

Risk culture is defined as the way of thinking, feeling and approaching risk in all its dimensions. [6], [12], [13]. It is a set of knowledge and behaviors characteristic of the way in which risk is apprehended from its identification to the implementation of the right measures allowing an effective control of it [12]. Other influential institutions including the Institute of Risk

Management define risk culture as being the values, attitudes, understanding, knowledge and beliefs about risk common between an assembly of people with a mutual purpose [5], [14]. Moreover, risk culture is commonly referred to as the key contributor to dampening scandals throughout the global financial crisis [2].

To sum it up, risk management concerns all different types of organizations - including private firms, public organizations, governmental bodies, and not-for-profit organizations. In fact, risk culture is more of a perception adopted by the managers, a position, or an angle from where these supervisors identify risks to which they adopt the right measures. In management literature, there are three possible positions for a risk manager: Curative, preventive and a Risk and opportunity-based approach.

– Curative/corrective approach: Some historians believe that the first concept of risk management emerged through the theory of games, such as dice games which have been known for at least 2000 years. These games gave rise to the theory of probability, important for risk management [15]. However, the path of the development of risk management through history remains unclear and therefore literature agrees upon tracing the history of risk management for only about 50 years back. Risk management has started with the curative approach, giving birth of the insurance phenomenon. This attitude refers to often immediate action which acts on the effect or the cause of the dysfunction. This is the treatment of the product that does not comply with the ISO standard. It can be a recovery, sorting or scrapping operation. These acts take place after the dysfunction, or the risk occurs.

– Preventive approach: After many financial scandals, managers understood that the curative position could not possibly guarantee a long-term survival and perennity in an uncertain environment. The solution was to be proactive and adopt a preventive approach towards risks [16]. Prevention, as a tool of risk management strategy, includes an adequate design of information system that immediately responds to the information needs of actors, even in the most complex situations that can arise. Taking as an example risk of the "bullwhip effect", regarding fashion products known to have very short life cycle and fluctuating demand levels. If actors do not have access to information coming directly from the market, this can lead to an unneeded inventory and as a result, the risk of financial losses will be the result. In other words, the effects of the risk in a preventive approach should be assessed before the risk happens contrary to the curative approach. action that acts on the probable causes of a potential malfunction in order to prevent its appearance. These actions are determined by analyzing the risks of malfunction. These risks may have proven to be real in the past or may have been mere predictive assumptions. However, it is to mention that this approach is based on the one before. A company cannot use prevention without having a full history of corrective action upon which it bases its prevention. This is more of a learning cycle [17].

– Risk and opportunity-based approach: The risk-based approach refers to the identification of risks, the planning, as well as the implementation of actions in the face of the identified risks. The aim is the establishment, implementation and improvement of the quality management system and processes. The risk-based approach is one of the great novelties of the ISO 9001:2015 standard. This reference defines risk as the effect of an uncertainty that could have positive or negatives consequences. In theory, the positive effect of a risk may provide an opportunity. An opportunity may arise from an advantageous situation in the spam of searching for results. As an example, a set of circumstances can allow the organization to attract customers, develop new products and services, reduce scrap, or improve productivity. Just like the effect of a risk can result in an opportunity, seizing an opportunity can also be associated with risks creating a loop. Therefore, the risk-based approach combines both risks and opportunities analysis as advised in the ISO 9001:2015 standard. Taking into account of both risks and

opportunities serves as a basis for improving the effectiveness of the quality management system, achieve better results and prevent the negative effects of risks. [9]

B. Risk Culture Aspect Models

As analysts and theorists have indicated [2], [5], a firm's culture impacts all aspects of its organizational lifespan. Culture eventually dictates what methods, procedures and structures can be effective to an organization. The culture gives customized answers to the company's anomalies, considering their background and believes, as well as what wouldn't face reluctance from the employees. In fact, the majority of the organizational culture theorists highlight the fact that there is no single best organizational culture. We can give a simple example of contingency theories who deny having one best way for all. What is suitable and what is not alters depending on the context.

As discussed before, risk culture refers to how managers within an organization see, understand, and react to risks. Once this culture is clear, it traces the road for risk management related aspects and eventually risk management practices. according to risk management institute risk culture can be measured through a self-assessment that takes into account four different areas [12] :

a. Tone at the top

- 1) risk leadership - clarity of direction
- 2) how the organization responds to bad news

b. Governance

- 1) the clarity of accountability for managing risk
- 2) the transparency and timeliness of risk information

c. Competency

- 1) the status, resources, and empowerment of the risk function
- 2) risk skills - the embedding of risk management skills across the organization

d. Decision making

- 1) well informed risk decisions
- 2) appropriate risk taking rewarded and performance management linked to risk taking.

C. Risk management in the Moroccan public sector

Public Establishments and Enterprises are the first public investors ahead of the State. They represent decisive actors in the national economy, contribute considerably to the implementation of public policies, allowing the acceleration of the pace of economic and social development, the diversification of sources of growth and the improvement of living conditions. On the theoretical level and based on the comparative approach comparing the public sphere to the private sector, it is recognized according to the followers of the school of property rights such as Furubotn and Pejovich, that economic and financial performance of privately owned enterprises is considered predominant, and elite compared to public bodies in general [18];[19];[20]...The desire to modernize the public sector is what motivates a lot of changes in this area, leading to the emergence of a new paradigm, called New Public Management (NPM). It refers to the transfer of "private" practices to the public structure, aiming to spread a culture of performance in a less centralized public sector [21]. The NPM theory is based on the conception that the management of the public apparatus as it is today "inoperative, excessively bureaucratic, rigid, onerous, focused on its sole growth (Leviathan effect), non-innovative and having an excessively centralized hierarchy". We could easily admit this for public management in Morocco as well.

In Morocco, the public organizations aren't immune to risk. During Covid for example, these categories of structures were shook and had to adapt their management to that period. Furthermore, even when public enterprises are generally in a monopoly situation, the Moroccan industry remains largely dependent on imported raw materials and semi-finished products. This explains the inadequacy of the level of the overall value added rate which stagnates at 23% and the pronouncement of importation [4]. Globalization brings risk, modernization, environment... There are many elements that are sources of risk. All of this is what further encourages the sector of public enterprises to implement operational risk forecasting and management mechanisms as part of their good governance policies.

The risk assessment process within public establishments is most often governed within the framework of an "internal control system" which consists in identifying the risks likely to compromise the achievement of the entity's objectives, to analyze these risks and to monitor their management. For each objective identified, several risks can be recognized. Once identified, general or strategic risks can be used as a factor that facilitates the identification of the operational risks traced in the internal control frameworks of the entity concerned.

III. RESEARCH METHODOLOGY

This article aims to give a detailed view of Risk Management canvas in a public organization through a qualitative method. This case study's purpose is to get a head start into a deep understanding of how Risk as a concept is perceived in public sector. We aim to understand how far ahead this subdivision of organizations into the process is of developing a positive risk management culture through understanding the unique case of the national office of airports of Marrakech known as ONDA (Office National Des Aéroports).

To reach this objective, we used a qualitative method with a unique case study approach. We used data analysis of direct interviews with the internal auditor and the quality manager, observations, and documents analysis. The case study as a research method is the intensive analysis of a unit (person or community), emphasizing the factors of development in relation to the environment [22]. In our analysis we focused on these main areas:

- The perception of risk within the company and to each manager
- The organization of risk management procedures
- What is an effective risk management?
- what types of risk are managed?
- The respect of process and system approaches
- The impact of Covid upon all the elements above.

A. *Presentation of the case study unit: the National Office of Airports: Marrakech (ONDA)*

Marrakech-Menara International Airport (IATA code: RAK • ICAO code: GMMX) is an international airport, south-west of Marrakech in Morocco, the second most important Moroccan airport after Mohammed-V airport in Casablanca. The office's legal status is a Public industrial and commercial establishment. The management within the office is organized through 9 processes:

- Process PM01: General management
- Process TPU PR02: PAX processing process and A/P users
- Process NA PR03 : Air Navigation
- Process CCS PR04 : Dealer Management
- Process Srt PS05 : Safety
- Process Sct PS06 : Security
- Process AL PS07: Purchasing and logistics

- Process Maintenance PS08 : Maintenance
- Process RH PS09: Human resources

IV. RESULTS AND DISCUSSION

A. RESULTS

In the general context, it is undeniable that risk management has entered the natural practices of companies and organizations of all sorts. Furthermore, COVID 19 pandemic came to prove that no entity is totally prone to risk and to deepen the need of risk management. The organization object of our study came to give live evidence to prove our theory right, and confirm in more ways than one, that risk management is taking more amplitude than ever before.

In the office, risk management practices have only been generalized upon the totality of processes in 2018, only few months before the start of COVID 19 pandemic. We have noted from the several interviews that we have administered, that leadership is quite engaged in the incorporation of risk management practices. Their goal is to reach a positive risk management culture capable of fluidifying the prevention of danger in the said office and to learn from the epidemic's experience.

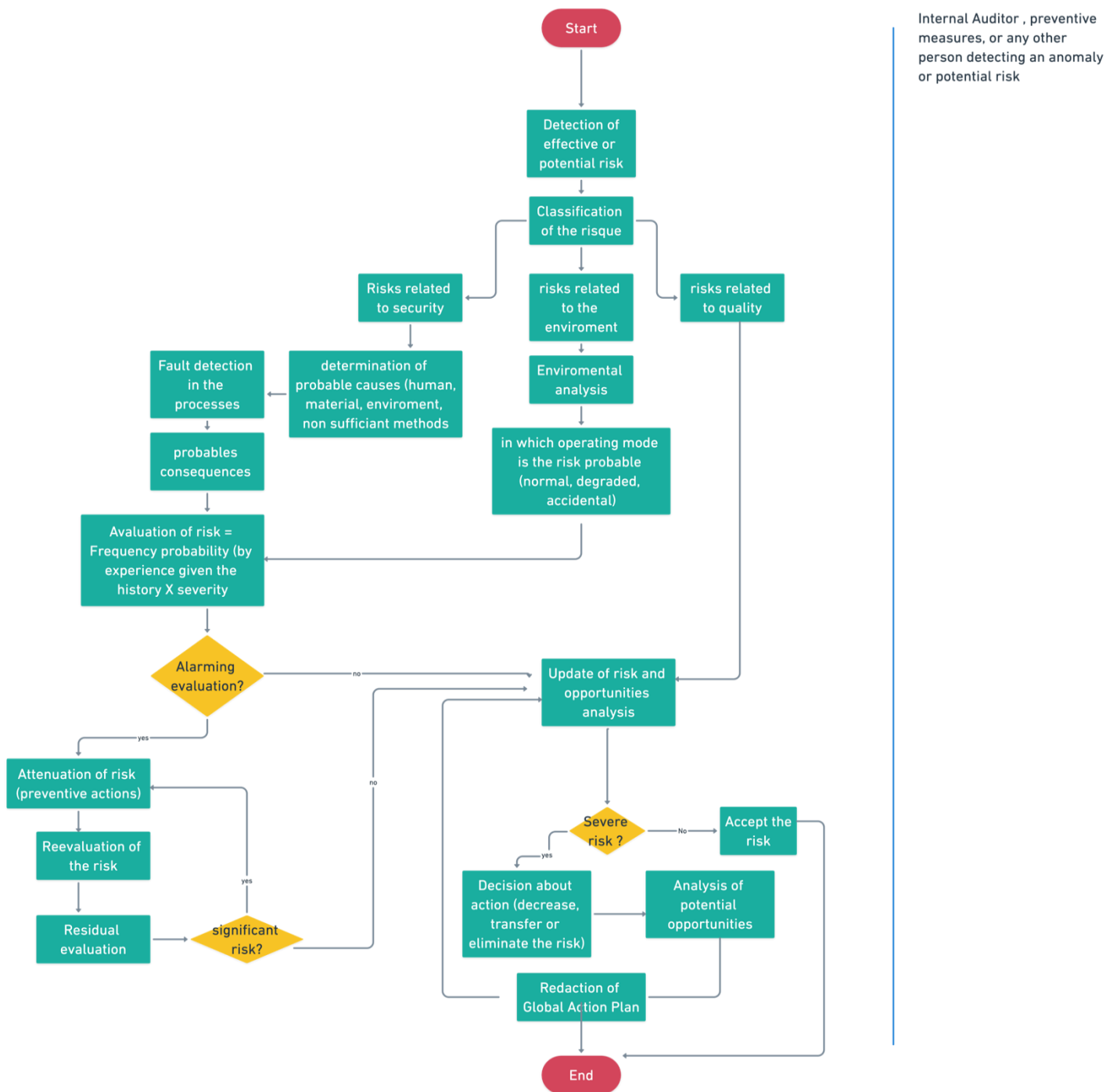
To showcase the main observations, we have noted through our study, we will first address a detailed description of how risk management is organized in the office. Afterward, we will pinpoint what Covid 19 has changed within the risk management culture and practices.

Starting with the organization of risk in the company, it is to note that there is no entity fully responsible of risk management. It is rather one of internal audit missions to manage risk and follow up with corrective and sometimes preventive measures. We found in all recommendations of improvement in 24 out of 27 internal audit reports of 2019 the recommendation to "improve risk analysis" in the process concerned by the audit.

Therefore, we note that the absence of an entity responsible of risk could be alarming. This choice of organization is apparently due to the culture of risk in the office. In fact, the interviewees mentioned on several occasions the highly technicality of the positions as being one of the major reasons employees show a certain reluctance to change. According to them, the pressure applied on employees by the quarterly audit missions is already enough. It is rather a strategic choice to include risk management within internal audit missions given the nature of this service which is based on a risk approach. The leaders of the company were able through this method to downplay the expected reluctance to change.

In addition to internal audit, the department of quality management is also responsible for managing risk in the company. The process' pilot has mentioned that she manages 3 levels of risk:

- Risks related to environment: In compliance with the requirements of the ISO 14001 standard, the office undertakes to deal with the risks that can harm the environment. The environmental risk can materialize through water, air or soil pollution, subsoil, or groundwater of the site itself. To manage this type of risk, the company takes various measures. The company takes preventive measures
- The purpose of the security risk analysis or risk assessment is to ensure that the workplace is conducive to the performance of the tasks. The airport has made sure to implement prevention measures adapted to security conditions.
- Risks related to quality: Quality risk is the effect of uncertainty on an expected result [23]. Most often, a risk is characterized with reference to potential events and/or potential consequences or a combination of both. This effect can be a deviation, positive or negative, from an expectation or from the objectives set.



These risks are classified in a map named "risks and opportunities map (ROM)". It is a document that is updated once per year or whenever a major risk appears during the same year and out of the periods of the audit missions. There is a map to every one of the 9 processes in the organization. Each process pilot in collaboration with the responsible of "quality and environment management" process' pilot must manage their map and keep track of the recommendations within. Each process treats three sub-levels of risk. Each of the levels is related to one of the three following systems: Quality and Environmental Management system, Aerodrome Safety Management System and Air Navigation Management System.

The following flowchart unveils how managing risk really works. As showed, each type of risks is treated separately with the aim to update the "risks and opportunities map". Depending on the severity of the risk and its continuity in time, the quality manager updates the global grid of

risks. In fact, this is how the company assures organizational learning, through documenting every risk, centralizing information, and following through with every action undertaken.

The urgency of the risk is calculated with the classic approach of gross risk rating based on two axes (impact * probability of occurrence).

Even when the office has a well-structured process of managing risks, it is mainly theoretical. These steps aren't automatically chained but rather depend on the auditor to always announce the following step. This was mainly observed on the level of updating either the global plan or the ROM.

Overall, the office has a well-structured procedure manual. It is a document that takes form of clear and precise instructions. It contains all the current operations of the company. It is a standard for common use by all employees within the company. This common reference is what unites the nine processes with the internal auditor. This therefore allows a good foundation for continuous improvement. The managers also keep in mind the importance of a good communication and a strong governance for a better risk management. On this matter, we note indeed a solid engagement from the leaders' part. To strengthen the communication among different levels of hierarchy, the processes' pilots rely on a "monitoring and evaluation plan". This allows the different correspondents to keep track of documentary flow within the company. However, according to the interviewees, this organizations has played major role in developing a reactive attitude towards risk. The process is always to recover from a risk after it occurs and minimize the damage of potential threats. It is important though to mention that the management keeps a regulatory watch.

– **The experience of Covid 19**

Like any other organization, Marrakech airport went through exceptional crisis of Covid-19 pandemic. This eventful era has generated huge upheaval and confusion in companies which has stimulated new thinking about what safety means.

For our office, even where risk culture was relatively accepted and generalized, the experience took a toll on the employees. This pandemic has pushed ONDA-Marrakesh to change its risk management model and perspective.

To face the perturbations that came along the epidemic, the managers went through a study of impact thinking in the beginning that that this phase was temporary. When it appeared that it wasn't the case, management has switched to a curative position. The approach was to keep a sharp regulatory and strategic watch and react accordingly. This was very different from the preventive approach that the company swore by. This has pushed the concerned managers especially those in positions of responsibility, to question the strength and weaknesses of the probabilistic methods of evaluating risks. In consequence, ONDA has been since in the process of revising its main risk management tool: "risks and opportunities map (ROM)". The aim is to define a new map capable of facing unexpected risks, main weakness of the preventive approach

Figure 1 - Flow chart of risk management process

based on the history of experience.

B. discussion of results

The culture of risk management is well structured within the airport of Marrakech (mapping available, guides, regular analysis...). This defies the general belief of reluctance to risk in public structures [18], [24], [25] and the superiority of privately owned enterprises' performance [19], [20], [26]. However, the risk management approach lacks formalization (updating and/or enriching the mapping of risks and opportunities by those determined and treated without leaving a trace) or by implementation (maintaining the continuous exercise of

identification of risks and opportunities if necessary). These elements are primordial for an effective risk management [27], [28].

ONDA Marrakech chose a preventive approach while using a risk and opportunity-based approach tools. The enterprise uses Risk and opportunity mapping, it is a tool that [9] advises for an effective risk management. As recommended by the same standard, the director bases their risks extraction on needs analysis among other sources. PDCA tool is also respected. At the overall level of the quality management system, ONDA uses audits or self-assessments, corrective actions, preventive actions, and management reviews which make it possible to act at the level of the organization's quality objectives, which corresponds to the "Act" part of the PDCA cycle used in the establishment and management of the QMS. The company uses Risk and opportunity mapping to plan the risk management, the planning step is answered. ONDA then follows with global action plan for preventive actions and corrective ones that are monitored regularly. This responds to all steps of the PDCA CYCLE. Even when the company uses risk and opportunity-based approach tools, it holds a preventive position towards risk. This could be easily understood from the steps followed to manage anomalies and risks. The managers base their opinion on a grid that centralizes all risks that were faced in the lifespan of ONDA. However, this philosophy proved to be useless while facing "unexpected" risks. That was the case for COVID 19 where the managers had to go back to a curative approach. In addition, the raw rating of the Covid-19 risk has been completely underestimated, both in terms of the probability of occurrence and in terms of impacts (human losses, substantial operating losses linked to the confinement obligation, etc.).

Therefore, boards of directors in general, and audit committees in particular, must question the relevance and reliability of the risk management system currently deployed. They must also question the relevance of certain strategies previously deployed and considered as acquired and irreversible. This actually gives evidence to many authors such as [29]–[31] who believe that the "surprise" of Covid 19 should bring lessons to managers who believe that their tools are irreversible and effective. Society is in dire need to learn lessons and update their risk culture. It is not always about reactivity but rather way more than that. Authors have been lately discussing the transition between the response and recovery phase in relation to pandemics [32] and how phase should bring lessons to risk managers.

V. CONCLUSION AND SUGGESTION

This study aimed to understand risk culture in a public owned enterprise. The use of a study case was to reach a deep understanding of the reality of procedures. We were able through this approach to observe how Covid 19 was an element that made questions arise on whether probabilistic methods in evaluating risks are reliable.

In this study, we understood that if ONDA was of any reference, Moroccan public enterprises are invested in developing a strong culture of risk through implementing lean procedures that enable the company to manage its risks from a preventive perspective with more developed tools inspired from ISO 9001 standard that recommends a risk and opportunity-based standards.

The results of this study could not be generalized for the simple reason that the aim was to reach a deep understanding of one case. We can however use these outcomes to say that Covid 19 was a shifting point for many companies that use probabilistic methods to manage their risks as it was the case of ONDA who had to switch positions and adopt a curative one to manage Covid 19 related risks. Post that period, ONDA is in the process of reviewing its tools taking into consideration the nature of activities within the company and the experience of the pandemic. Future studies could use larger samples to enable generalization of "how is risk culture within Moroccan public companies" or make a comparison between a certified entity and one that is

not to check if this strength of risk culture within ONDA is due to it being certified ISO 9001: 2015.

VI. BIBLIOGRAPHY

- [1] OECD, *Digital Government Review of Morocco: Laying the Foundations for the Digital Transformation of the Public Sector in Morocco*. OECD, 2018. doi: 10.1787/9789264298729-en.
- [2] M. Power, S. Ashby, et T. Palermo, « RISK CULTURE IN FINANCIAL ORGANISATIONS », London, A research report 1, 2013. [En ligne]. Disponible sur: http://eprints.lse.ac.uk/67978/1/Palermo_Rsik%20culture%20research%20report_2016.pdf
- [3] B. Stephen, S. Hoejmose, et A. Millington, « Managing Sustainable Global Supply Chain : A systematic review of the body of the knowledge », NBS.net, Montreal, Revue Systématique, 2011. [En ligne]. Disponible sur: <https://static1.squarespace.com/static/5d5156083138fd000193c11a/t/5f2f392000808376d3ba0db3/1596930371018/NBS-Executive-Report-Supply-Chains.pdf>
- [4] L. Jaidi, « L'industrialisation de l'économie marocaine : acquis réels et modalités d'une remise en cause », in *Le Maroc actuel : Une modernisation au miroir de la tradition ?*, J.-C. Santucci, Éd. Aix-en-Provence: Institut de recherches et d'études sur les mondes arabes et musulmans, 2013, p. 91-117. Consulté le: 13 avril 2021. [En ligne]. Disponible sur: <http://books.openedition.org/iremam/2421>
- [5] Deloitte, « Cultivating a Risk Intelligent Culture Understand, measure, strengthen, and report », Deloitte, United States, research paper, 2012. [En ligne]. Disponible sur: <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/center-for-corporate-governance/us-ccg-cultivating-a-risk-intelligent-culture-050212.pdf>
- [6] U. R. de Oliveira, F. A. S. Marins, H. M. Rocha, et V. A. P. Salomon, « The ISO 31000 standard in supply chain risk management », *J. Clean. Prod.*, vol. 151, p. 616-633, mai 2017, doi: 10.1016/j.jclepro.2017.03.054.
- [7] A. S. A. Larsen, G. H. Volden, et B. Andersen, « Project Governance in State-Owned Enterprises: The Case of Major Public Projects' Governance Arrangements and Quality Assurance Schemes », *Adm. Sci.*, vol. 11, n° 3, p. 66, juill. 2021, doi: 10.3390/admsci11030066.
- [8] P. M. Collier, *Fundamentals of risk management for accountants and managers: tools & techniques*. Oxford: Butterworth-Heinemann, 2009.
- [9] ISO, « ISO 9001 : 2015 SYSTÈMES DE MANAGEMENT DE LA QUALITÉ », ISO, 9001, 2015.
- [10] J. P. C. Kleijnen et M. T. Smits, « Performance metrics in supply chain management », *J. Oper. Res. Soc.*, vol. 54, n° 5, p. 507-514, mai 2003, doi: 10.1057/palgrave.jors.2601539.
- [11] O. Lavastre et S. Alain, *Comment gérer les risques liés à la chaîne logistique ? Une réponse par les pratiques de SCRM (Supply Chain Risk Management)*. 2010.
- [12] COSO II, *Le management des risques de l'entreprise Une démarche intégrée à la stratégie et à la performance*, Ed. d'Organisation. Paris, 2015.
- [13] M. Power, « The risk management of everything », *J. Risk Finance*, vol. 5, n° 3, p. 58-65, mars 2004, doi: 10.1108/eb023001.
- [14] KPMG, « Enterprise Risk Management The Current State of Risk Management Maturity for Belgian Organizations », KPMG, Belgium, Survey, 2017.
- [15] T. Merna et F. F. Al-Thani, *Corporate risk management*, 2nd ed. Chichester, England ; Hoboken, NJ: Wiley, 2008.
- [16] E. E. W. Mandzila et D. Zéghal, « Management des risques de l'entreprise : Ne prenez pas le risque de ne pas le faire ! », *Rev. Sci. Gest.*, vol. 237238, n° 3, p. 5-14, 2009.
- [17] M. ALAOUI et Y. DHIBA, « Le management des risques : Cadre théorique », *IJAFAME*, vol. 3, n° 1-1, p. 118-142, 2022.

- [18] W. M. Nelius et J. Ambrose, « Internal auditing and financial performance of public institutions in Kenya: A case study of Kenya Meat Commission », *Afr. J. Bus. Manag.*, vol. 11, n° 8, p. 168-174, avr. 2017, doi: 10.5897/AJBM2017.8267.
- [19] F. Rakhman, « Can partially privatized SOEs outperform fully private firms? Evidence from Indonesia », *Res. Int. Bus. Finance*, vol. 45, p. 285-292, oct. 2018, doi: 10.1016/j.ribaf.2017.07.160.
- [20] S. Tong et E. Junarsin, « Do Private Firms Outperform SOE Firms after Going Public in China Given their Different Governance Characteristics? », *Gadjah Mada Int. J. Bus.*, vol. 15, n° 2, p. 133, juin 2013, doi: 10.22146/gamaijb.5699.
- [21] M. Guenoun, « Le management de la performance publique locale. Etude de l'utilisation des outils de gestion dans deux organisations intercommunales. » Sciences de l'Homme et Société. Université Paul Cézanne - Aix-Marseille III, 2009.
- [22] Y.-C. Gagnon, *L'étude de cas comme méthode de recherche*, 2nd ed. Québec: Presses de l'Université du Québec, 2012.
- [23] A. Chiarini, « Risk-based thinking according to ISO 9001:2015 standard and the risk sources European manufacturing SMEs intend to manage », *TQM J.*, vol. 29, n° 2, p. 310-323, mars 2017, doi: 10.1108/TQM-04-2016-0038.
- [24] H. Boullanger, « L'audit interne dans le secteur public », *Rev. Française Adm. Publique*, vol. N° 148, n° 4, p. 1029-1041, 2013.
- [25] C. Hood, « A PUBLIC MANAGEMENT FOR ALL SEASONS? », *Public Adm.*, vol. 69, n° 1, p. 3-19, mars 1991, doi: 10.1111/j.1467-9299.1991.tb00779.x.
- [26] W. M. Nelius et J. Ambrose, « Internal auditing and financial performance of public institutions in Kenya: A case study of Kenya Meat Commission », *Afr. J. Bus. Manag.*, vol. 11, n° 8, p. 168-174, avr. 2017, doi: 10.5897/AJBM2017.8267.
- [27] J. R. Kuhn, M. Ahuja, et J. Mueller, « An examination of the relationship of IT control weakness to company financial performance and health », *Int. J. Account. Inf. Manag.*, vol. 21, n° 3, p. 227-240, juill. 2013, doi: 10.1108/IJAIM-12-2011-0042.
- [28] L. Trabelsi, « Les Systèmes d'Information Urbanisés: étude et analyse de leur performance », thèse pour obtention de diplôme de doctorat en sciences de gestion, Nice, France, 2014.
- [29] S. Frimousse et J.-M. Peretti, « Repenser la culture d'entreprise après la crise Covid-19 », *Quest. Manag.*, vol. n° 31, n° 1, p. 151-206, févr. 2021.
- [30] M. McMaster, C. Nettleton, C. Tom, B. Xu, C. Cao, et P. Qiao, « Risk Management: Rethinking Fashion Supply Chain Management for Multinational Corporations in Light of the COVID-19 Outbreak », *J. Risk Financ. Manag.*, vol. 13, n° 8, Art. n° 8, août 2020, doi: 10.3390/jrfm13080173.
- [31] A. Richter et T. C. Wilson, « Covid-19: implications for insurer risk management and the insurability of pandemic risk », *Geneva Risk Insur. Rev.*, vol. 45, n° 2, p. 171-199, sept. 2020, doi: 10.1057/s10713-020-00054-z.
- [32] B. (SHM) Fakhruddin, K. Blanchard, et D. Ragupathy, « Are we there yet? The transition from response to recovery for the COVID-19 pandemic », *Prog. Disaster Sci.*, vol. 7, p. 100102, oct. 2020, doi: 10.1016/j.pdisas.2020.100102.