

# **WHY IS THE RISK ANALYSIS ESSENTIAL IN THE PROJECT MANAGEMENT PROCESS?**

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## **Abstract:**

According to some experts, the risk analysis is a complex and compulsory step in the project management that assures its success. Indeed, its aim is to allow the company to identify, analyze and respond the different risks it may have to face thanks to various tools like the Delphi Method, the “fishbone” diagram, the FMEA (Failure Mode and Effect Analysis), etc. This research paper highlights the major role of the risk analysis illustrated during all the demonstration by the example of a press conference organization in January 2014. The results are that a complete risk analysis increases the success probability of companies’ projects thanks to the following five steps underlined in the PMBOK Guide. However, this report emphasizes that even if there is several tools that are available for companies, they have to use them carefully, cleverly and efficiently during the whole project management from the risks identification to its real facing.

**Key words:** Project risk analysis, project management, project success, project performance /

**JEL Code:** D81, H43, O22

## **Introduction:**

“In the business world, ”risk” is a scary word “(Eagle Registration Inc Website). Evolving in an uncertain business climate where trends change almost every day and where new technological equipments become too quickly obsolete is very difficult and stressful for companies. Indeed, according to Stoica & Constantin ( 2012), the risk may be defined as the possibility of the emergence of a random and unpredictable event that would affect the

achievement of technical/cost objectives or project terms. According to this fact it seems obvious that project managers should have to deeply analyze risks that could impact their project and find solutions to avoid them. However we will see, in this research paper, that it is not always the case and that nowadays companies do this analysis more because they are expected to than because they want to. A trend which has to change regarding the fact that 90% of new product launch fails (Etienne Gless, 2013). An assessment that could have been different thanks to a precise risks analysis based on various tools that allows companies to anticipate and evaluate their project's risks. Hence, in a second phase we will more precisely develop these tools and the analysis process needed to improve the chances of companies' main aim: the success. Through the demonstration we will note that doing the risk analysis is a mean to stack all the odds in your favour to be successful, but only if it is done in a certain way.

### **The risk analysis is now expecting from project managers**

Even nowadays, the risk analysis is not a reflex for companies for different reasons. First, there are companies which don't really know how to do such analysis because this process is complex. Indeed, doing a complete analysis requires the use of various tools which can be difficult to understand added with the fact that project managers sometimes don't really know what their project's threats are. Then, other companies are dissuaded from doing this analysis by its cost : project managers who are not at ease with this process can chose to externalize it by hiring a specialized society, but this action is often too costly for companies' budget .We also often hear the "consumers don't know what they want" excuse coming from managers who didn't yet realize the importance of this analysis and still consider that if the consumers themselves don't know what they want it is impossible for companies to try to understand and anticipate risks. And last as said before the risk analysis is complex and need the use of multiple tools which take a long time to be done; a point underlined by Tom Peters who said in 1998: "the more time you spend planning, the less time you will need to spend on implementation. Almost never the case! " (Bigelow, 1998). This variable is one of the most important, mostly for short term project because project managers have to form a risk analysis team or at least a group of people who will be dedicated to this task and then give them time to be sure of the project feasibility, a process which is often too long to be undertaken.

However, it seems that companies now don't really have the choice of doing or not this risk analysis, indeed they can't avoid the risks whether they change or not. Remaining the same with its original range of products and production process also involve some internal risks like equipment problems, or employees' strikes and external too (natural disasters, political instability...) that have to be anticipate. Moreover the risk analysis is expected from project managers first by the company as a guarantee of the project feasibility. Companies also want to know if they have allowed adequate resources for this project and what amount of time or costs they have to anticipate if some risks occur. Besides, this analysis is wanted by stakeholders too: a project which is clearly defined, whose risks are deeply identified with a precise knowledge of the project external and internal environment, is a project in which stakeholders can trust. For instance investors will be more confident in investing in an event or in a new product line if they see that all the risks possibilities had been considered. Indeed the avoidance of the risk analysis in some companies was the cause of a lot of project failures, Frederic Cordel adds that "it's not rare that more than 50% of companies' big project fails" (Frederic Cordel, 2013) because first they don't take into account all the potential risks and especially human risks which are the most numerous and the most present. Secondly, companies have to consider that a risk can occur directly during the project launch like for the space shuttle challenger which was, according to Harold Kezner, a real disaster due to a bad risk management: "Challenger's service [...] space program ended in tragedy." "Just 73 seconds into mission a booster failure caused an explosion that resulted in the loss of seven astronauts" (Jeanne Ryba, 2013), or ten years after the project launch like for companies' bankruptcies.

In order to avoid these incidents some recognized entities try to help companies by giving them the tools to do their project risk analysis. It is the case for the International Organisation for Standardization (ISO) and its 2009 publication ISO 31000 named "risk management – guidelines on principles and importance of the risk management" (ISO Official Website). These concepts can be used by small, medium-size and big companies to go through and perform in an uncertain environment.

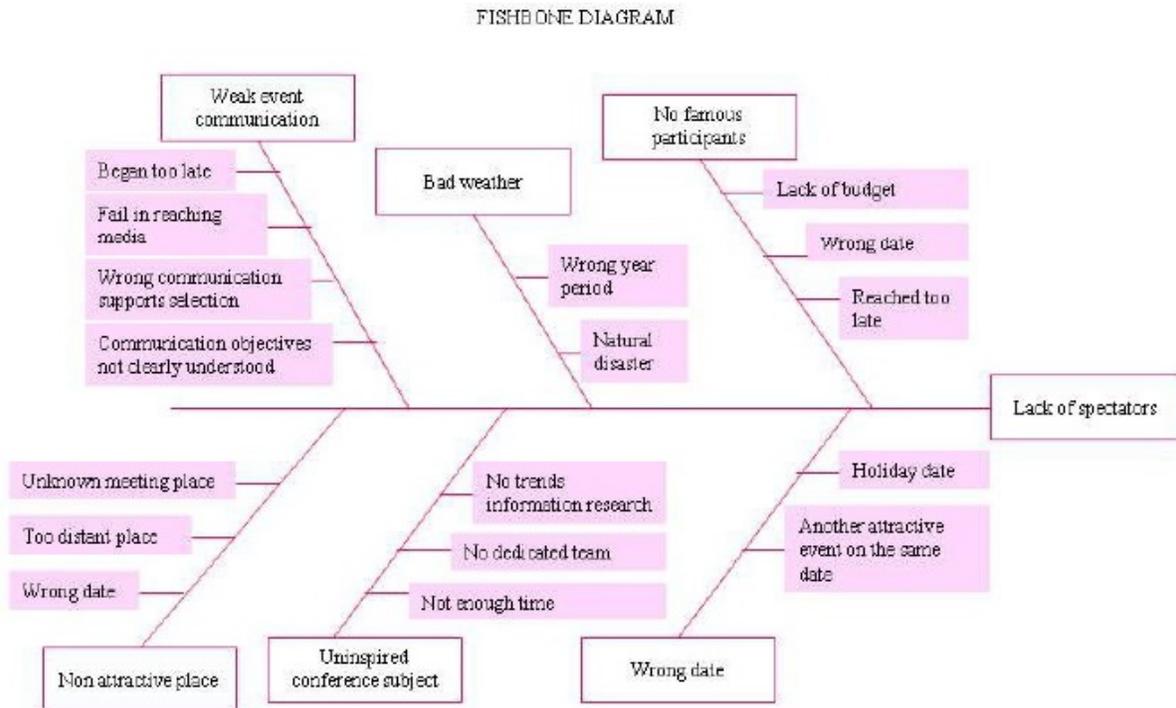
## **How doing a complete risk analysis**

As said in the abstract, the main purposes of the risk analysis is to identify, analyze and respond to project risks, three steps I will define in this part. To illustrate this demonstration I will use a project I used to organize during my one year internship: a press conference organization.

### **Identifying the risks**

The risk identification is the step that comes very early in the project plan because it has to be done before the project launch as proof of the project feasibility. In this stage we will group the risk management planning and the risk identification, which are the two first subprocesses defined in the PMBOK Guide. The risk management project is crucial for project managers because it allows them organize and plan their risks management actions for the whole project (Harold R. Kezner, 2013). However, we usually note that companies don't use it well because they often focus their analysis on project externalities like business conditions or state of technologies, forgetting "to track the pertinent environment and estimate survival chance project" (Harold R. Kezner, 2013). Besides companies usually consider a risk only in its negative aspect but it also can be positive with new opportunities on which project managers have to capitalize. By focusing on possible misfortune, companies reduce their chance of success because they don't plan actions to emphasize these potential positive impacts. The second step, the risk identification, as to be considered as unique for each project because it depends on the project's nature and environment. Hence the risks identified will not be the same if it is an economic or a cultural project. This process is very long because companies have to take into consideration all internal and external aspects, an approach not always applied by project managers who sometimes just focus on externalities or "on internal environment: interpersonal risks, negative market risks..." (Champion D., 2009). To be accurate companies have to improve their knowledge of their environmental constraints imposed for instance by the Food and Drugs Administration or Federal and State's laws, and other compulsory things that can't cancel companies' project. To organize this research various tools are available for project managers like the Delphi Method (Dalkey, Helmer, 1969) created during the cold war to anticipate the impact of technology, brainstorming or nominal groups to stimulate creativity and collect

numerous ideas. Last but not least, managers can use the cause and effect or also called “fishbone” diagram. This tool was developed by Kaoru Ishikawa in the 1960’s and allows a relevant analysis of each risk in order to understand what the different ways which can cause this risk are. Let’s use the example of the press conference “fishbone” diagram to illustrate this remark:



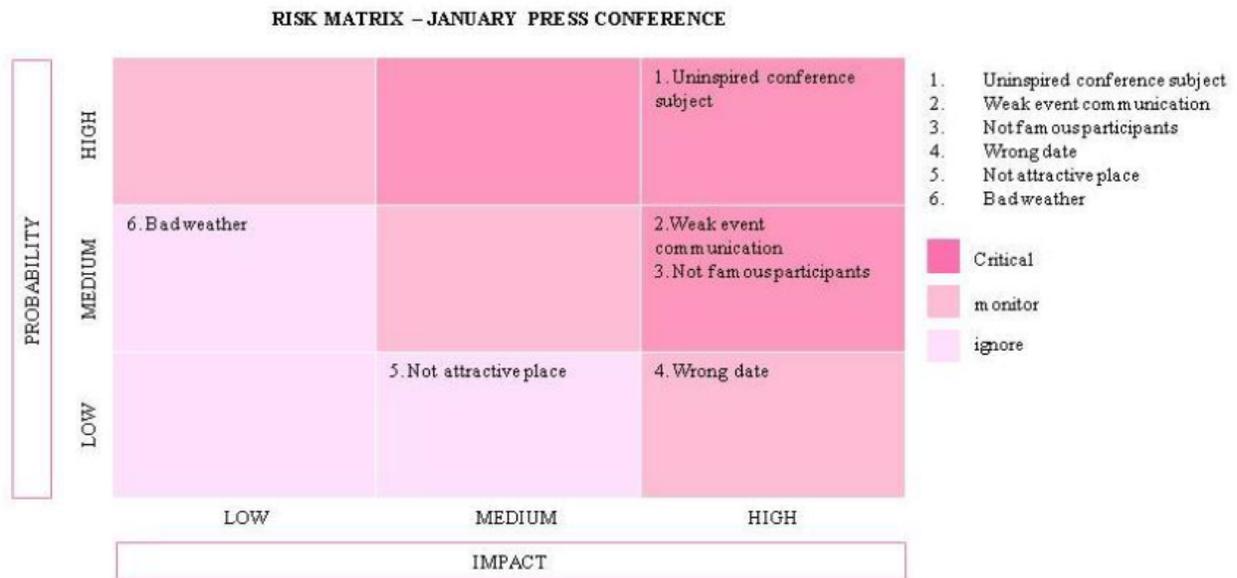
*Figure 1: Fishbone Diagram  
Source: Work cited*

As we can see this diagram helps project managers to more easily approach and understand the uncertain project climate. We have on the right side an outcome of failure (lack of spectators) which could very badly affect our project success, and on the left all the ways and sub-defaults that could lead to it (wrong place, subject or date, weak event communication...). This tool is again a way of improving and more guarantying the project success because if people know what can negatively or positively impact their project they can find solution to avoid or improve it to be successful.

### Analyzing the risks

The identification of the risks is an essential part in the risk management process but it can’t be used just like that by the project managers. Indeed they can’t consider as important each

factor of risk because, first, it will take us too many time to find a solution for each one and then it would lead to a very confuse amount of solutions for the team and the stakeholders. In order to go through obstacles and be successful, project managers have to present to their stakeholders clear actions for the major risks (Stephen Robbins & David DeCenzo, 2008). That’s why they have to analyze more deeply the risks identified and prioritize the most important ones thanks to a qualitative and a quantitative analysis (Project Management Institute, 2004). The first one will allow the project manager to score the risks according to a subjective or objective probability for them to occur. To do this scoring he can use a scale from low to high impact and probability and a rank from 1 to 5 respectively no important and very important. The risk scoring has to consider first serious data like for instance figures on natural disasters to calculate its probability to happen, or Government’s official website to be sure of the laws involved. Then to evaluate the impact of one threat, the project manager also needs to scale project objectives by importance (cost, time, scope) in order to more easily select the risks they have to prioritize. Last to shape these researches he can use the risk matrix based on the probability and the impact of the project to visually scale the risk from those which can be ignored to the critical ones (Harold Kezner, 2013). To illustrate and understand how this matrix works let’s use our previous identified risks for the press conference:



*Figure 2: Risk Matrix – January Press Conference*

*Source: Work cited*

Regarding this risk matrix we can conclude that project managers has to focus on the attractiveness of the subject, the efficient event communication and the celebrity of the participants. It results that these three points are the three most dangerous risks concerning the lack of spectators, a negative outcome because we consider the audience as one of the press conference successful factor. Thanks to the qualitative risk analysis, the project manager exactly knows the potential risks for which he has to find a solution and those which can be ignored. Once the qualitative analysis is done, the project manager can do a quantitative one in order to be always more accurate and reassure the stakeholders. One of the most famous quantitative tools is the 6 steps Failure Mode and Effect Analysis (FMEA) (Stamatis, 2003). The project manager first lists the various factors that can lead to the failure of the project and then estimates the severity of each impact with a 10 points scale from “no effect” to “very severe”. This evaluation is associated with the letter “S”. Then the project manager evaluates in the same way the likelihood with the letter “L” and last the ability to detect the failure in time; letter “D”. Thanks to these appreciations he is able to find the Risk Priority Number:  $RPN = S \times L \times D$ . Thanks to this tool, the project manager only has to find a solution to reduce the “S”, the “L” or the “D” for each risk to be more able to avoid it in time and raise the potential success of his project (Stamatis, 2003).

### **Responding the risks**

We arrive at the last part of the risk analysis which is the implementation of all the steps did before: a stage that really emphasizes the crucial role of risk analysis as a project successful factor. Indeed, according to the impact and probability evaluated during the two previous steps, the project manager has 4 different approaches that can be used to face the risk. The first one is the total risk avoidance. This can be illustrated by the use of alternative resources or for instance the implementation of a scope change procedure to annihilate the scope creep impacts. This also can mean the adoption of an extreme solution like the cancel of the project to avoid the bankruptcy if the project feasibility can't be proved. The second approach is the “transfer”, this means that we “remove the project contractor from the danger of the threat” (Harold R. Kezner, 2013). For instance we use insurance to transfer the monetary risks. If we keep the example of the press conference, I realized during my internship that this approach was the most privileged

by our customers. Hence we used to be hired to do the communication for this type of conference because the client considered this point as one of the most dangerous ones and he wanted to transfer the responsibility to optimize its success chances. Then, the third approach is the possibility to mitigate the risk, by softening its impact and likelihood to occur, this can be translated by the use of simplified processes for instance. And last the project manager has also the possibility to accept the project: mostly when the solution to avoid the risk is too costly or if we talk about the “ignore” risk matrix category. This responding plan also can be implemented for positive risks because it allows 4 approaches for opportunities too: exploit, share, enhance and accept.

Thanks to this long lasting risk analysis, it seems that project managers have all the tools needed in their hand to be successful in their project management even if we talk about negative or positive risks. By using the risk analysis they can anticipate the failure risks and manage their activity to try to avoid them, and even if some of these solving actions can be costly it will remain cheaper than a total project failure. However can we consider by the simple availability of these tools is sufficient to lead to a successful project? Hence, in this case the risks could be known without being shared with the team or really implemented in the decision making and all of this analysis would just be totally useless.

### **The risk analysis: a project management’s value added**

The different tools available in the risk analysis have to be a part of the decision making and organizational process in order to really add value to the project, that is to say that project managers have to take into account the results of this study during all the project management. Indeed the results are not fixed, they are flexible and have to be considered as “dynamic, iterative and responsive to change [because] if the project objectives or the product change the risks change too” (Eagle Registration Inc. website). Hence, the risk analysis is a continuous process which has a memory of changes. Indeed, if corrective actions happened during the project implementation, project managers have to remember them, integrate these actions in the risk management charter, and this is also true for mistakes. By this I mean that project managers can reach the perfection the first time and can’t really expect it from an uncertainty climate management: “no risk is full known until it occurs” (Eagle Registration Inc Website). However

they have to learn from their mistakes and take them into account in their charter as references of what can't be done as solving actions.

Then, we can't assume that the risk analysis would be useful if it is not totally integrated by the team and all the stakeholders. Indeed, if we consider that for one particular risk we associate a solving action, all concerned people have to know and understand this measure to quickly apply it if the risk occurs. During one of the press conference I organized during my internship, I forgot to inform my boss that if our participant's PowerPoint presentation didn't work with the technological equipment another one was available, and unfortunately the document didn't function. She quickly found a solution but this could have had a negative impact on our project. The technological risk was one of the most risky points because without presentation the participants can't really do their work and the client satisfaction (customers who hired us to organize the event, spectators, participants) at the end of the event was not the one expected. Last we know that the human factor is most difficult to anticipate because we are not machines and we can make a lot of unexpected mistakes. The human risk is already taken into account in a basic risk analysis that's why it is crucial to inform the work team and the stakeholders of solving measures chosen in order to not add mistakes of unadvised people in their amount of risks.

## **Conclusion**

Despite the fact that it is a long-lasting process which can be costly or considered as useless by companies, the risk analysis is essential in the project management process and can be used as a success guarantee. Thanks to an accurate and well-founded ranking of the risks according to their probability to occur and potential impact, it allows project managers to prioritize some solving measures in order to improve their chances of being successful. To illustrate this fact, I described some of the tools that can be used thanks to the example of a press conference organization. However we noted that a risk analysis is truly useful only if it is considered as a continuous process in which precedent mistakes and changes are registered, and if it is known and clearly understood by all the stakeholders. This last recommendation has to be very carefully taken into account by companies in order to not spend too many time and money on a useless and not successfully completed risk analysis. The risk analysis can be a mean to reach the companies' main purpose: the success.

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