Project Risk Management in an Automotive Company

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STRUCTURED ABSTRACT

Purpose - The main purpose of this research project was to analyse the project risk management practices in an automotive company, in order to recommend appropriate improvements.

Design/methodology/approach - The research methodology chosen to conduct the study was case study, since the research was carried out in a multinational company in the automotive industry, and data was collected through observation, document analysis and a questionnaire.

Findings – Although the company has defined how to approach project risk management, it was found out that the reality experienced does not reflect what is proposed by the major references. The proposal for an approach to risk management, process by process, was well received and appreciated by the project team.

Research limitations/implications - Due to the size of company, and also in some cases due to confidentiality reasons, it was not possible to obtain all the necessary data for a more accurate analysis. Additionally, due to the work routine, communication with colleagues was rarely immediate or fluid. It is also important to highlight the fact that project risk management is not an established practice within the organization.

Originality/value – Risk management practices as other project management practices are context dependent and should be adapted to the situation. Other companies working with a similar context can benefit from this study and adopt similar procedures to improve their risk management practices.

Keywords: Case Study, Project Management, Project Risk Management, Risk Management Processes.

Paper type: Research paper

INTRODUTION

Since we live in a competitive world and are forced to face the growing evolution of the market, organizations need to be increasingly flexible and have a strong capacity to adapt to change. The current organizational environment requires organizations to focus on a global perspective, ambitious awareness and innovation. To gain competitive advantage in this global economy, it is paramount to embrace different challenges with new approaches, combining the interaction between projects and focusing on long-term benefits (Blichfeldt & Eskerod, 2008). With a correct application of project management techniques, problems of effectiveness and efficiency will be solved, giving companies bases for delivering consistent commercial value and, therefore, establishing strategic competencies within the organization (PMI, 2017).

Project management is a progressively consistent reality in the organizational environment. Therefore, there is a growing need to manage projects in a well-organized and systematic way, so they contribute positively to companies. In this way, project management has achieved weight and relevance, becoming a strong organizational asset to complex management challenges (Zhai, Xin, & Cheng, 2009). Thus, with the progressive interest in project management, the focus has also expanded to multiple projects, programs, portfolios and other applications in organizational environments (PMI, 2017).

In summary, according to PMI's vision, project management can be defined as an organized and interrelated group of processes, with the purpose of achieving previously outlined objectives, through the combination of the use of tools and techniques to plan, perform, monitor and control work activities.

In order to remain competitive, due to the constant changes in technology and markets, companies need to use practices and tools to plan and control their projects. Since projects are becoming more complex and deal with a higher level of risk, it is essential to choose the best practices and tools to be applied in different types of projects in order to comply with their objectives and increase their probability of success (Ribeiro, 2018). In this sense, project risk management turns into an essential activity factor to contribute to project success. To be more effective, risk management must become part of the culture, within the organization. This should be incorporated into the organization's philosophy, practices and business processes, rather than being seen or practiced as a separate activity. When this is achieved, everyone in the organization is involved in project risk management (ANZS, 2004). A strategic approach to manage risks in projects also recognizes the need to introduce advanced risk management practices in all areas of the decision-making process (Wieczorek-Kosmala, 2014). Thus, in order for decision making to be as informed and effective as possible, it is

essential that there is a very well organized and methodical approach in order to reduce the likelihood of project failure.

The course of the development and implementation of a project is followed by unique and temporary characteristics, being a complex process and always associated with some level of risk and uncertainty. In this sense, risk management has been developed as a fundamental part of project management. As it is one of the most pertinent areas of knowledge among good project management practices, there is a significant number of authors who have published standards and guidelines on how to manage the risk in a project (Fernandes, Ward, & Araújo, 2013).

To the concept of "risk" is often attributed as negative connotation, a view shared by older publications, which consider risk as the cause of failure, therefore, a barrier to success (Miles & Wilson, 1998; Padayachee, 2002). Although the inclination for this perspective to be more intuitive, there are other interpretations regarding this term. By consulting the Project Management Body of Knowledge (PMBOK) and the Management of Risk: Guidance for Practitioners (M_o_R), risk can not only affect negatively the purposes of a project, but also influence it positively (AXELOS Global Best Practice, 2014; PMI, 2017). Both ISO 31000: 2018 and NP ISO 31000: 2012 identify these two sides (negative and positive) of the risks. Other relevant references, such as the Individual Competence Baseline (ICB4) and the Managing Successful Projects with PRINCE2, practice the separation between “threat” and “opportunity”, where the first refers to the negative effects and the second to the positive effects of the occurrence of certain events that influence the project's objectives (IPMA, 2015; OGC, 2009).

Risks are inevitable when the topic is “projects”, since they are facilitators of changes and changes introduce uncertainty, hence many risks. The risk management practice must always be systematic and not punctual, throughout the project life cycle. The aim is to proactively identify, assess and control the risks that may affect the delivery of project results (OGC, 2009).

According to PRINCE2 and M_o_R, risk is an uncertain event that, when it occurs, contributes to the success or failure of a project, by influencing the achievement of its objectives. It consists of a combination of the probability that the negative or positive event will occur, and the magnitude of the impact on the objectives. Consequently, the term risk management refers to the systematic application of procedures to the tasks of identifying and assessing risks and then planning and implementing plans to respond to those risks, providing an appropriate environment for decision making (AXELOS Global Best Practice, 2014; OGC, 2009).

Project risk management includes the processes of plan risk management, identify risks, perform qualitative and quantitative risk analysis, plan and implement risk responses, and monitor risks. The

objectives of project risk management are to increase the probability and/or impact of positive risks and, of course, to decrease the probability and/or impact of negative risks, in order to optimize the possibility of the project being successful (PMI, 2017).

Risk management aims to enable professionals not only to understand and efficiently deal with threats, but also opportunities. As it is a continuous process throughout the life cycle of a project, it must always go through the risk identification and characterization phase, as well as assessment, response planning and implementation, and control. A project manager is responsible for keeping the project team engaged in the risk management process, involving all stakeholders and encouraging them to remain alert to new threats and opportunities (IPMA, 2015).

RESEARCH METODOLOGHY

In order to answer the research question "How to improve project risk management practices in an automotive company?" all research work was conducted with a very close contact with the organization, since the main researcher was inserted in the company's environment.

The strategy underlying the research methodology in this project was case study and the techniques used to collect data were observation, document analysis and a questionnaire. The case study methodology allows an in-depth understanding of the current situation, giving the opportunity to propose new practices. According to Yin (2014), the chosen research methodology becomes relevant when the main objective is to explain some present circumstance, for example, in the case of clarifying “how” or “why” some contemporary social phenomenon occurs. It is a suitable methodology to use when dealing with an investigation of the situation in its real context, and it can even be used as a complement to other types of investigation. In addition, the case study reveals a very useful way to explore an existing theory, enabling the development of in-depth and detailed knowledge about the risk management practices in the company.

PROJECT RISK MANAGEMENT

Within the scope of this study, it is essential to understand how risks are managed in the organization’s projects and how the risk management process fits into the project management practices.

The present investigation was developed under the scope of two projects, the Ford C-HuD (Ford Combiner Head-up Display) and the BMW C-HuD (BMW Combiner Head-up Display). A head-up display is a vehicle’s extra feature located in front of the steering wheel in the driver's front field of view. Depending on the equipment, it is responsible for projecting important information to the user,

such as traffic signs, current speed, navigation directions, speed limit warnings, and other notifications, so that the driver can keep his eyes on the road (BMW, 2020; Ford, 2020).

In order to characterize the reality experienced regarding to risk management within these two projects - Ford and BMW C-HuD -, a small questionnaire was carried out and distributed to the most relevant project team members. The main objective of this action was to understand the general perspective perceived by the teams concerning the risk management practices, addressing the underlying processes and other relevant issues, and assessing the current level of risk management maturity.

The observation and daily interpersonal contact, as well as the document analysis, which happened during the development of this study, made possible the awareness that not all risk management processes are carried out regularly. Thus, one of the main objectives of the questionnaire was to confirm or refute this understanding.

The data collected by the questionnaire confirms the deductions previously exposed. Figure 1 presents the risk management processes suggested by PMI (2017), with the respective percentage of team members who confirm their realization during the course of projects.

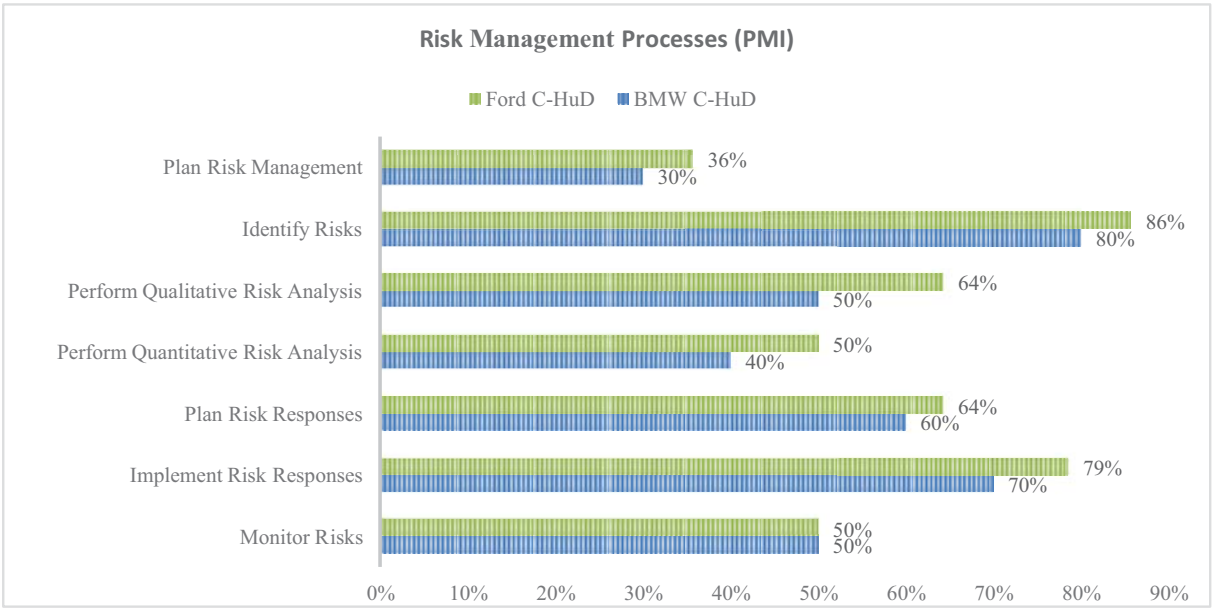

Figure 1 – Perception of execution of risk management processes in the projects

Once questioned about the risk management activities the team feels are being conducted in these two projects, the vast majority agree that risk management planning is not carried out efficiently. It appears that plan risk management is considered a secondary activity, making risk management a reactive process and not a continuous one. It becomes evident the need to develop a risk management plan duly substantiated and detailed so that, when included in the project management plan and, therefore, presented to the project team, its contribution is normalized and effective.

The identification of risks is conducted on a regular basis, however in a non-formal way. Most of the risks are identified verbally in regular project meetings and later described in presentation format for later discussion with the project team and the customers. Initially, a Risk Register was created and filled sporadically throughout the life cycle of the projects, however it was eventually abandoned. This is the risk management process most practiced in the project, according to the data collected, although not always carried out at the beginning of the projects.

Regarding qualitative risk analysis, in general, the definitions of risks associated with the probability of the risks occurring and the severity of their impacts are presented simultaneously with the risks identified.

The quantitative risk analysis process, as expected, is rarely carried out. This reality is understood if one considers the dimension of the organization, due to a difficulty in accessing certain information, such as costs and data related to the quantitative analysis of the identified risks impacting on the objectives of the projects. In addition, this process is also not always applicable to the types of risks identified.

In the planning of risk responses, it seems that the responses are defined in the moment, in most cases with little planning or consideration, due to the few amount of time available to plan and analyze in detail the responses to the risks identified.

At the same time, the implementation of responses also appears reactively, neglecting planning. However, it turns out to be one of the most performed processes.

Finally, risk monitoring is the risk management that must be seen as an activity transversal to the project, of continuous monitoring, and not momentary.

The project teams define the current risk management practices as something that needs improvement, as it shows in Figure 2 (Hillson, 1997; Hopkinson, 2017). It’s considered to influence decision making in the sense that promotes the project performance, however there is no structured, well-defined and generic approach, which does not allow to take advantage of all the benefits that an effectively implemented risk management approach has to offer.

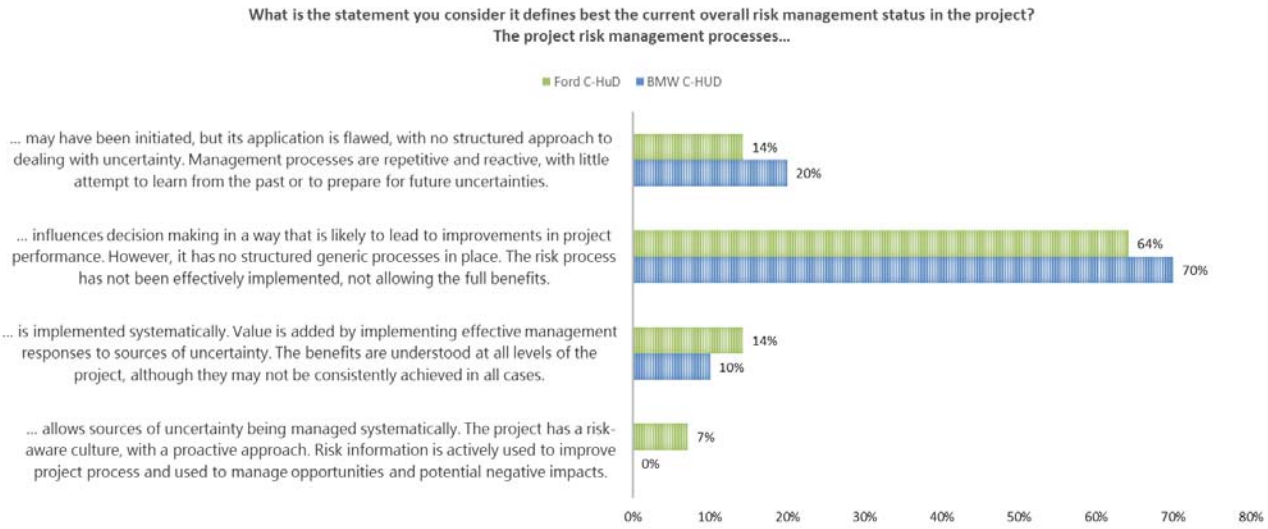

Figure 2 - Risk management characterization in Ford and BMW C-HuD projects

Adapted from Hillson and Hopkinson (Hillson, 1997; Hopkinson, 2017)

By the analysis of the questionnaire responses, there also seems to be a tendency to consider that certain risk management processes are performed when in reality that is not what it is observed directly in the investigation field. Although the organization has a recommended and accessible project risk management process, in the specific case of the projects under study, the process is not followed, at least in its entirety.

Therefore, there is a clear need to promote what the main references and standards outline and consider as good project risk management practices.

PROPOSED APPROACH TO PROJECT RISK MANAGEMENT PROCESS

The organization's projects, as they present such a wide range of different people and backgrounds, face numerous adversities and uncertainties, that, if not managed efficiently, can lead to the downfall of the projects. Thus, there is a need for a well-defined risk management process, with notable maturity, so that the emerging risks do not affect the achievement of the project's objectives, which are often representative in terms of the organization's capital. With this in mind, the improvement of existing risk management practices becomes relevant, which involves the improvement of the underlying processes that favor the risk management practice.

The PMBOK Guide® is currently recognized as one of the best references regarding the knowledge underlying the project manager profession, which includes the traditional good practices and also some innovative ones in this area. There is consensus on its usefulness and value, since its application to real projects can increase the probability of success. Despite using a generic structure, this guide

is also flexible to change the number of phases depending on the complexity of the project (PMI, 2017).

Thus, based on the recommendations of the PMBOK Guide®, a proposal for an approach to manage risk was defined for the Ford and BMW C-HuD projects, which can always be improved. The proposal comprises the seven processes suggested by the PMBOK Guide® and it will be presented next.

Plan risk management

Before risks are properly identified, it is necessary to plan how they will be managed. Here it is important to develop and implement, in a consistent way, a risk management model framed with national and international standards of the industry in which the project is inserted, and with the policies followed by the organization. This model should have as its main objective to ensure that threats and opportunities are managed in a systematic way throughout the life cycle of the project.

The risk management plan should contain the description on how risk management activities will be performed and structured, the specific tools and general approaches that will be used to managing risk on the projects and the roles and responsibilities that will support all the processes. In addition to all of this, it is also necessary to define when and how often the project risk management processes will be conducted throughout the project life cycle. The funds for activities related to project risk management must also be clearly defined, as well contingencies and management reserves (PMI, 2017).

This risk management plan must also be documented in the project files and accessible to all stakeholders. Once defined, it must also be summarized into a short version by the project manager, to be presented to the whole team, possibly in one of the regular meetings of the project. In this plan, as well as in the presentation, the objectives and benefits of the risk management approach must be clearly emphasized, in order to motivate the team.

Identify risks

The identification of threats and opportunities is an activity of great challenge because it is a significant part of a continuous process and for which it is essential to get people involved, given that the sources of risk are identified throughout the life cycle of the project. For this process, the use of a risk register is proposed (Figure 3), which must be intuitive and user friendly, and integrate the risks identified with all the remaining risk management processes, except the risk management planning.

The identification of risks should always be adapted to the activities and methodologies already followed in the scope of the two projects. As communication is mainly based on online platforms, it

is recommended to collect current risks through meetings with the project team via video conference calls, since the team is not all in the same location. As a support, it can be used the master time schedule of each project - time plan with all project activities - as a guide for dialogue, in order to help provide a direction to follow while identifying risks. Weekly, during regular project team meetings, an internal assessment should always be conducted to see if new risks have emerged.

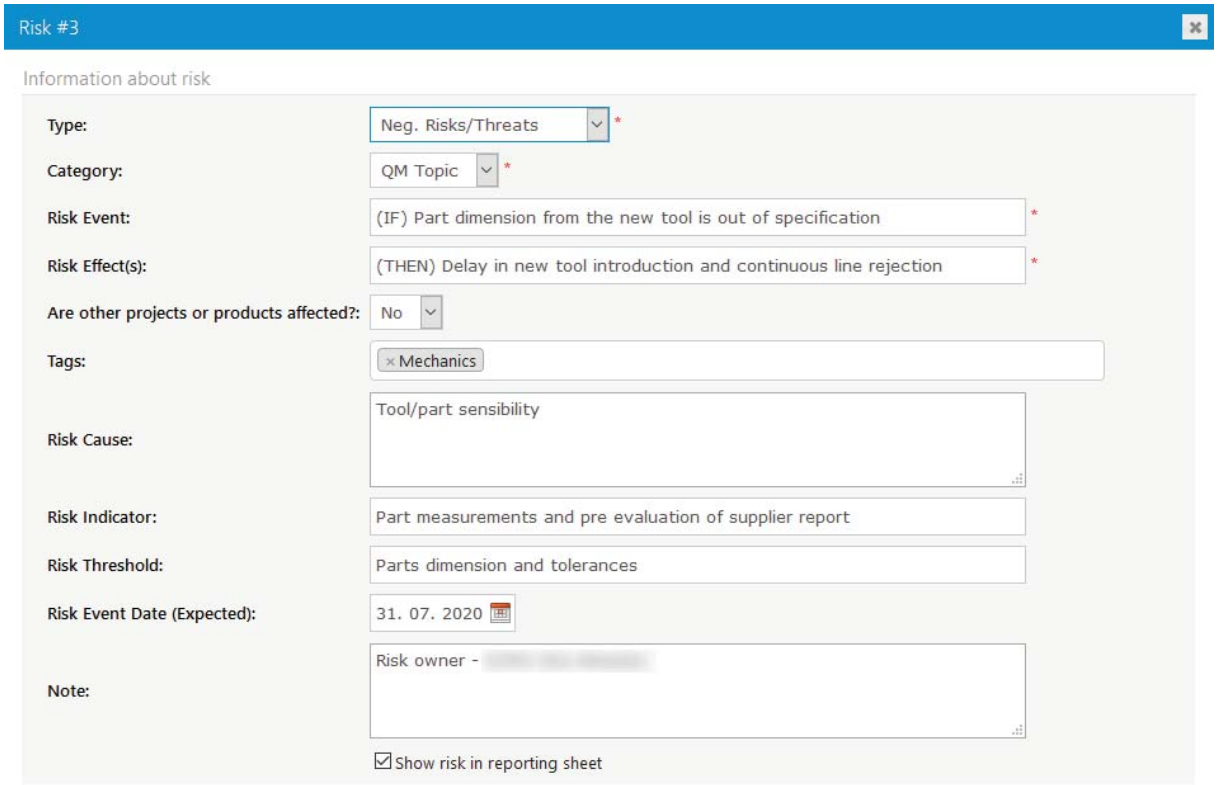

Figure 3 - SuperOPL Risk Management Tool: new risk example (Bosch, 2020h)

Qualitative risk analysis

Once threats and opportunities are identified, it is essential to assess their likelihood of occurrence and future consequences. The insertion of a new risk in the risk register allows the qualitative assessment of risks not only in the present, but also after the response action measures have been implemented (Figure 4).

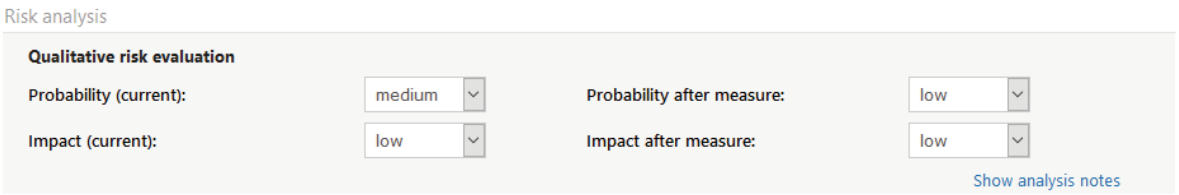

Figure 4 - SuperOPL Risk Management Tool: risk analysis example (Bosch, 2020h)

As a support, and in order to standardize the entire process, the same auxiliary assessment tables should be used, one for the probability of the risk occurring (Table 1), and two for the severity of its impact, separating between negative risk (Table 2) and positive risk (Table 3).

Table 1 – Risk probability assessment (AXELOS Global Best Practice, 2014)

Probability	Criteria	Likelihood
Very High	> 75%	Almost certainly will occur.
High	51 – 75%	More likely to occur than not.
Medium	26 – 50%	Fairly likely to occur.
Low	6 – 25%	Unlikely to occur.
Very Low	0 – 5%	Extremely unlikely or virtually impossible.

Table 2 – Negative risk impact assessment. Adapted from Bosch (2019d)

Severity of Impact	Deadline	Specification / Quality	Costs	Time
Very High	- Postponement of important delivery dates (e.g. testing, release samples). - Postponement of other milestones. - May cause SOP* to be postponed.	- Clear deviation from the specification, not acceptable for (RB**) customer. - Very Severe Flaw: flaw that may have a detrimental safety effect and/or violates statutory regulations.	500 K EUR increase in costs	6 months increase in time
High	- Postponement of important delivery dates (e.g. testing, release samples). - Negative effects on SOP* currently not expected.	- Clear deviation from the specification and not acceptable for (RB**) customer. - Severe Flaw: operational capability of the vehicle strongly reduced, immediate visit to car workshop mandatory.	250 K EUR – 500 K EUR increase in costs	3 – 6 months increase in time
Medium	- Postponement of few important delivery dates (e.g. samples) and/or milestones. - Acceptable for the customer.	- Clear deviation from the specification but most probably acceptable for (RB**) customer (under certain conditions). - Average Flaw Severity: minor annoying impact for the customer who will most likely experience a minor adverse effect only.	100 K EUR - 250 K EUR increase in costs	2 – 3 months increase in time
Low	RB**-internal postponement of date only.	- Slight deviation from the specification, hardly perceived by the (end) customer, acceptable for (RB**) customer. - The Flaw is of Minor Importance: minor annoying impact for the customer who will most likely experience a minor adverse effect only.	50 K EUR- 100 K EUR increase in costs	1 - 2 months increase in time
Very Low	RB**-small internal postponement of date only.	- Slight deviation from the specification, hardly perceived by the (end) customer, acceptable for (RB**) customer. - It is unlikely that the flaw could have any perceivable effect on the vehicle behavior.	< 50 K EUR increase in costs	< 1 month increase in time

*SOP = Start of production
**RB = Robert Bosch

Table 3 - Positive risk impact assessment. Adapted from Bosch (2017, 2019d)

Severity of Impact	Scope	Specification / Quality	Costs	Time
Very High	Scope extension desired by (RB**) customer.	- Clear deviation from the specification. - Quality increase desired by (RB**) customer.	500 K EUR decrease in costs	6 months decrease in time
High	Many scope areas affected.	- Clear deviation from the specification. - Only challenging applications are affected.	250 K EUR – 500 K EUR decrease in costs	3 – 6 months decrease in time
Medium	Few scope areas affected.	- Clear deviation from the specification. - Only a few applications are affected.	100 K EUR - 250 K EUR decrease in costs	2 – 3 months decrease in time
Low	No noticeable scope extension.	- Slight deviation from the specification. - Hardly perceived by the (end) customer. - No noticeable quality increase.	50 K EUR- 100 K EUR decrease in costs	1 - 2 months decrease in time
Very Low	Additional project scope is of no use.	- Slight deviation from the specification. - Hardly perceived by the (end) customer. - Additional quality increase is of no benefit.	< 50 K EUR decrease in costs	< 1 month decrease in time

**RB = Robert Bosch

After the risk probability and impact assessment, the probability-impact matrix is generated, as shown in Figure 5:

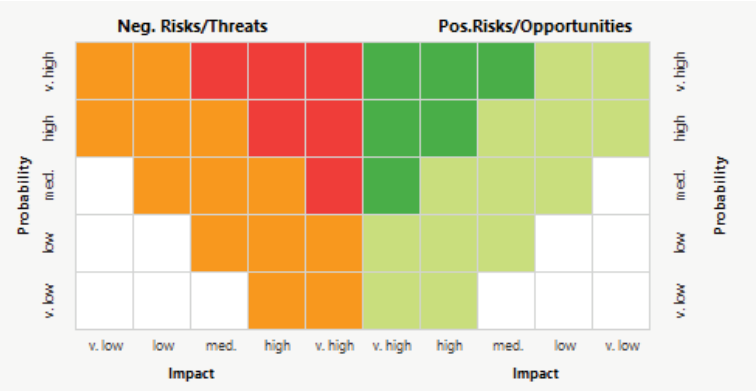

Figure 5 – Probability-impact matrix: example (Bosch, 2020h)

Quantitative risk analysis

Quantitative risk analysis is the process considered least doable since, in most cases, it is either not applicable to the type of risk identified or, due to the size of the company, requires information that is difficult to obtain. To support this process, if performed, it should be taken advantage of techniques such as data/document analysis.

Nevertheless, the insertion of a new risk in the risk register allows the evaluation of the Expected Monetary Value (EMV), if all fields are completed. Figure 6 shows a template example for quantitative assessment of risks in the risk register.

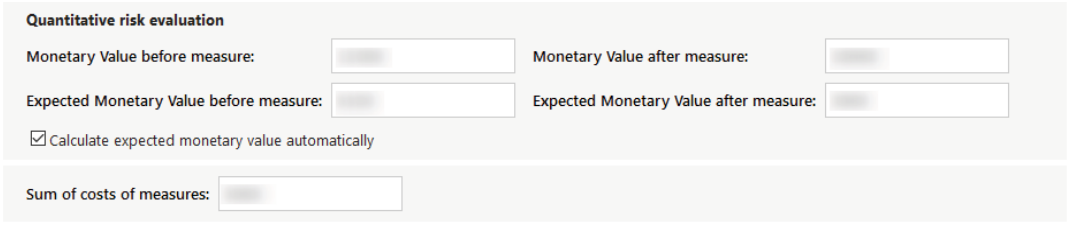

Figure 6 - SuperOPL Risk Management Tool: risk analysis example (Bosch, 2020h)

Plan risk responses

Once threats and opportunities have been assessed and conclusions withdrawn, it is important to consider the need for action to manage risks. It is up to the project manager to organize response planning meetings, and once these are implemented, the probability and impact assessments should be re-evaluated.

Risk responses must be designed to minimize threats and increase opportunities accordingly to project objectives. Strategies to respond to threats include avoid, mitigate, transfer and accept. In the case of opportunities, it is possible to exploit, enhance, share and accept. These responses are for moments before risks arise.

In addition, the project team can also rely on contingency response strategies, used only when certain events or conditions occur, that is, they are responses previously planned to the (negative) risks and implemented after these occur. In the case of opportunities, this type of response is called "augmentation", implemented after the opportunities materialize.

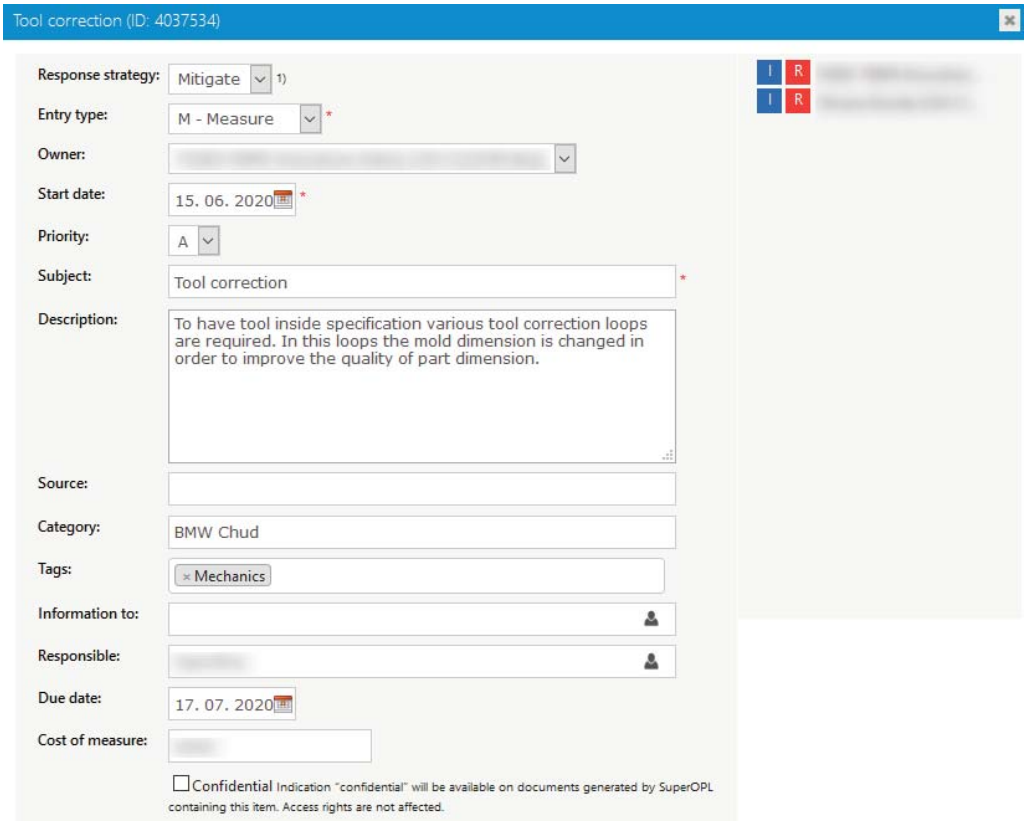

Figura 8 - SuperOPL Risk Management Tool: response measure example (Bosch, 2020h)

Implement risk responses

Once the various possible responses have been evaluated and the most appropriate ones have been selected, it is also necessary to implement them. As a support, regular meetings should be held to put into practice the response provided at the right moment and aligned with the project team.

Monitor risks

As previously mentioned, project risk management is not a one-time process, but an ongoing one throughout the project life cycle. Threats and opportunities should be monitored in parallel with the other risk processes, as responses chosen and implemented will need to be reassessed regularly.

At the first project meeting each month, the current status of all measures implemented for each respective identified risk should be updated. The status of the most critical risks and the updating of the risk list should also be a regular item on the agenda. New risks, if any, must be considered on the list of risks, assessed and resolved or mitigated by installing appropriate measures.

Summary

Table 4 summarizes and compares what was already being done/suggested and what the researcher proposes.

Table 4 – Project risk management summary table

Risk management processes (PMI)	What the company does or suggests	Reality experienced in the Ford and BMW C-HuD projects	What the researcher proposes
Plan risk management	Full definition of how and when risk management activities will be carried out on the project - should be documented in the project management plan. Participating team definition and methods to be used in the identification, assessment, reaction and control of risks.	Absent.	Plan carefully how the risk will be managed to ensure that threats and opportunities are systematically managed throughout the project life cycle. The objectives and benefits of the risk management approach must be clearly emphasized, in order to motivate the team. The risk management plan should also be documented in the project files, accessible to all stakeholders. A more short version should be created to be present in a project team meeting.
Identify risks	Collection of risks and documentation of their characteristics through a risk register (in SuperOPL or Bosch Risk Register).	Presentations (PowerPoint format) to present the risk list to the project team and customer. Bosch Risk Register initiated in the project beginning but then it was out of date.	Collection of risks in the risk list (in SuperOPL), using the master time schedule of all project activities as a support. Weekly assessment to check for new risks at project meetings.
Perform qualitative risk analysis	Determination of the priority of the identified risks (using the SuperOPL or Bosch Risk Register). Risk Indicator (RI) = Probability (P) x Impact (I). Scale for assessing the probability of the risk occurring. Assessment of the severity of the impact of the risk. Probability-impact matrix (Butterfly Diagram).	Presentations (PowerPoint format) to present the risks analysis to the project team and customer. Bosch Risk Register initiated in the project beginning, with risk analysis, but then it was out of date.	Risk analysis presented simultaneously with the identified risks (in SuperOPL). Table for assessing the probability of the risk occurring. Risk impact severity assessment tables. Probability-impact matrix.
Perform quantitative risk analysis	Costs can be determined for all identified risks or only for those that represent the greatest criticality. It serves as a basis for numerical assessing of risks (mostly impact costs) and their effects on the project objectives. Tools: EMV, tornado diagram (sensitivity analysis), and escalation scenarios in the case of interrelated risks.	Mostly non-existing.	If possible / applicable considering the most critical identified risks.
Plan risk responses	Measures should be evaluated in terms of cost-benefit of implementation and effectiveness. Planning considering response strategies for threats and opportunities.	Little planning and thoughtfulness.	Planning considering response strategies for threats and opportunities. If applicable, update the list of project open points (in SuperOPL) and the master time schedule of all project activities.

Implement risk responses	The previously agreed risk response plan must be properly implemented and executed. The main purpose of this process is to prevent no actions to be taken after opportunities and threats have been identified, evaluated and documented, and response measures have been defined.	Implementation of the responses appears in a reactive way, neglecting the planning.	Assess alternative means and methods for the implementation of the response plan. Regular internal meetings should be taken for alignment and introduction of the response plan.
Monitor risks	Risk monitoring and controlling should be seen as a continuous improvement process. The risks already identified, and the possible appearance of new ones should be reviewed regularly. There must also be close monitoring of previously agreed response plans implementation and an assessment of the effectiveness of this process.	Momentary, not taken as a continuous process.	Process that must be transversal to the project and continuous. At the 1st project meeting of each month, the status of registered risks and defined response measures should be analyzed.

CONCLUSIONS

During the course of the research project, the understandings and good practices associated with project risk management were studied, from a theoretical perspective, in order to apply to a case study and understand how risk management in certain projects could be improved. Based on the written literary review, as well as the direct observation of the case study, recommendations were suggested on how to conduct the processes underlying project risk management.

Risk management is an important concept recognized by the company's employees, however it seems not to be established in a consolidated and mature manner, perhaps due to a poor definition of priorities associated with the intense pace of work experienced, which often translates into a shortage of available time.

This research work provides the basis for a future implementation of the good practices recommended. Nevertheless, this restructuring represents different challenges, both in terms of processes and in the stakeholders' mindset. The developed project, because it addresses such a controversial and relevant topic in a project management context, also opens doors for several future investigations and opportunities for new studies, in order to complement the contributions achieved.

Thus, there is a clear need to raise project risk management to a higher level in terms of maturity. To this end, it is pertinent to make a contribution to existing knowledge in these matters, in order to document lived experiences and lessons learned, in order to be able to take advantage of the information shared.

PMI (2017), the organization used as the main reference for project management, presents risk management as a set of seven processes, namely: (1) plan risk management; (2) identify risks; (3) perform qualitative risk analysis; (4) perform quantitative risk analysis; (5) plan risk responses; (6) implement risk responses; and lastly, (7) monitor risks. The questionnaire carried out, as well as

interpersonal contact, direct observation and document analysis to which the researcher was exposed, provided evidence that these processes are not always accomplished efficiently. This study made it possible to verify that risk management lacks maturity and a structured approach to deal with uncertainty.

It became pertinent to define the content of the next step: the definition of a proposal for an approach to risk management, process by process, which could be improved after evaluating the results of its possible implementation.

Bearing in mind the results of this research, there is a clear need for training sessions on how to manage risks within projects. This study can and should serve as a basis for implementing risk management at a global level in the company, in a standardized and uniform way, with the possibility of being customized to the project itself if appropriate. In addition, the project team's reactions and behaviors to the changes made must also be analyzed.

In the future, the company should define priorities clearly, always considering top management and the long-term vision for the company's objectives and mission. Promoting greater motivation and enthusiasm for risk management is crucial, and this mindset is only fixed in the heart of the company if it is encouraged by its leaders. Basically, all efforts should be encouraged to promote a risk management culture, making aware of all the advantages that come from this process, which will end up benefiting the organization and, therefore, the employees themselves.

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