Scholars Journal of Economics, Business and Management OPEN ACCESS
Abbreviated Key Title: Sch J Econ Bus Manag
ISSN 2348-8875 (Print) | ISSN 2348-5302 (Online)
Journal homepage: https://saspublishers.com

Importance of Human Resource Management in Risk Management: A study with IT Industry

Dr. Mohammed Shafiuddin[1*], Mr. Bakhtawar Durrani[1], Mr. Abdul Rahman Ahmed Karam Al-Bulushi[1], Ms. Thuraiya Said Ibrahim Al _Farsi[1], Rahma Al-Hosni[1]

[1]Oman College of Management and Technology, Sultanate of Oman

DOI: 10.36347/sjebm.2022.v09i04.001 | **Received:** 24.02.2022 | **Accepted:** 30.03.2022 | **Published:** 03.04.2022

***Corresponding author:** Dr. Mohammed Shafiuddin
Oman College of Management and Technology, Sultanate of Oman

Abstract **Original Research Article**

Risk is part of every human endeavor. Risk Management area has grown many folds in past decade in direct proportion to the number of projects undertaken. The number of projects in all the sectors have increased to fulfil the quest towards a better and more and more productive, convenient and evolved life - and is termed as 'development' and 'growth'. With such increase in growth rate, the number of capital and resource intensive projects have also increased across all the sectors. Today for organizations, the competition, customer expectations, and developments in automation, IT technologies and concurrent engineering methods - all are pushing the project durations to fraction of durations they used to take a decade ago. Also with improvement in skills & competencies and communication and conveyance infrastructure getting hi-tech, today more and more projects are being managed from multiple locations within country or multiple locations spread across the globe. A business with an effective risk process will experience fewer surprises as it deploys the forward-looking radar of risk management. This research work is focused on the Risk Identification step of the risk management process. Risk management is high on the agenda for forward-thinking firms due to the increased pace of change, client demands, and market globalization. In today's economy, a thorough risk management strategy is required to stay afloat.

Keywords: Risk Management, IT Firm, Risk Identification etc.

1. INTRODUCTION

To put it another way: A project is a specific set of actions that have a certain set of goals and are completed within a specific budget and timeframe. Inability to meet the project success criteria results in project failures, if no timely recovery actions are taken. This forms the basis of need for project risk management. According to PMBOK-4'h Edition (PMI, 2009), "Project Risk Management includes the processes concerned with conducting risk management planning, identification, analysis, responses, and monitoring and control on a project. The objectives of Project Risk Management are to increase the probability and impact of positive events, and decrease the probability and impact of negative events in the project."

It reports using a corporate Risk Management methodology at Intel. Improved product development processes and less last-minute fire-fighting solutions to challenges were some of the advantages of this system. A proactive approach to risk management has resulted in improved communication among big platform development teams, faster product launches, and a reduction in the intense and stressful environment of product development. Intel's product development efforts are becoming more predictable as time goes on, and the goal is to reach a point where schedule pull-ins are the norm and timetable slides are the exception.

Thus, Project Risk Management strives to detect and priorities risks in advance of their occurrence in the project, and to give project managers with actionable information. Additionally, this perspective necessitates consideration of possible outcomes and their impact on aims, which is why they're characterized in words like likelihood or probability of occurrence.

Project Risk Management is an integral part of managing a project. It outlines that Risk Management comprises of Risk Identification, Analysis/Evaluation (Qualitative and Quantitative Analysis), Mitigation (Plan and Execute the Countermeasures) and Review (Monitor the Risk Register and update the project plan).

Before developing effective risk mitigation strategies, it is crucial to identify the risks and prioritize them so that team's attention could be focused on mitigating the greatest challenges first. Though built-in the Analysis step, a few authors suggest to introduce a separate step of Prioritizing & Mapping the risks alter the Analysis step.

2. RISK - A MANAGERIAL VIEW

There are two distinct approaches to the study of risk: one that focuses on the collection of data and the clarification of probability and its impact and another that focuses on the influence of experience, organization, society and culture on the analysis of risk. People's responses to danger are heavily influenced by the context and perspective they adopt. Researchers emphasize the importance of clarifying risk information and considering the values and culture of risk observers in a risk analysis through the use of quantitative approaches. Project risk is objective, and this means that there is a degree of reality in diverse judgments of the same risk. That is, while some people's perceptions of risk are more accurate than others, some people's judgments have cognitive flaws.

The definition of a risk phenomenon (the occurrence and its judgement of its severity) is derived from human values and mental processes, and the impact of risk is believed to be subjective. In most circumstances, the project stakeholders define the system objectives in a way that is important to them, which may be at odds with the project manager's perspective. Project members' social positions, organizational duties, values, and culture all play a role in their actions.

It is the thoroughness of risk identification that will define the effectiveness of Risk Management. However, there are some risks that have a significant impact on a project, even if they are not high level hazards. Multiple low-level dangers added together, however, could have serious consequences.

Projects of different complexities in different industry settings use different risk identification tools. These observations established a need of taking this research work - towards developing a more robust methodology for identification of Risks.

It is interesting to observe that the knowledge base of ingredients for both - project success and project failures is available in literature as well in man-hr experiences within project stakeholders. Even then the number of project failures are 5 to 7 times of the number of project success stories across different category of projects - and what is more surprising is that in suite of advances in technology and skills, the trend of scores has not altered even in two decades.

3. WHAT DETERMINES THE PROJECT RESULTS: EXPLORING THE REASONS

3.1 Project Failure perspective

There are several reasons which could be attributed to project failures. It could well be inferred that although the individuals and the environmental settings in the project are apparently different, the similarity in approaches adopted in planning, integration, scope and TCQ management, and decisions taken during implementation essentially intertwine in a series of ways which produce similar results — failures. The identification of the sources and timing of risk, potential mitigating and managing mechanisms could be developed.

Working in a professional capacity, the author has encountered the following issues in failed projects:

i. However, the risk identification was either done by the Project Manager or the team was confined to a few hours without allowing sufficient time for visualizing each and every component of the project.
ii. The project team members recognized the risks by focusing on their own areas and ignoring the interdependencies of the various components.
iii. The risks associated with the aggregate or product module level of the project were not linked to or correlated with the project level hazards.
iv. There is a lack of attention to the proper management of problems.
v. Identifying risks is difficult due to a lack of motivation among the members of the project team. By thinking on the risk countermeasures, they can become influenced.

3.2 Project Success perspective

When project managers focus on the project's success when dealing with risk, the risk management approach is often incomplete. Some other similar project success criteria are listed in the Chaos report.

Each stakeholder in a project has a role to play in the project's success. As part of this approach, six indicators of project success are defined: (1) timely delivery; (2) within budget limits; (3) on-time delivery; (4) on-time delivery; (5) on-time delivery as per requirements; and (6) on-time delivery as per requirements. Risk management practices and project success are linked by crucial intermediate elements such as project stakeholder communication and teamwork. In order to complete a successful new product development project, it is essential to have a clear understanding of what the product's unique selling proposition is.

Through a detailed web based survey reported following factors having substantial influence on project success:- i) Formal establishing of project

manager, i) Clarity in setting of Project goals, iii) Project Manager's competencies, iv) Establishing project team, v) High authority of Project Manager, and vi) Top management support.

Both project success and project management success are discussed in the same way. The former is assessed against the project's overall objectives, while the latter is assessed on the traditional performance indicators of Time, Cost, and Quality. 'Success criteria' are the project objectives based on which the project's success or failure will be determined, whereas 'success factors' are the management characteristics and inputs that contribute to project success or failure.

It is extremely important to clarify what construes a successful project, before initiating the project risk identification. If the project manager or any other stakeholders perceive that the any of the success criteria are not met, it could be identified as risk. It advise the criteria for (measuring) project success in three dimensions - 1. Meeting the Design goals (Time/Budget/Specifications), 2. Impact on Customer (Meeting customer requirements. Level of customer satisfaction attained), and 3. Benefits to Organization (Level of commercial success, % Gain in market share, developed a new line of products and developed a new technology). Further suggest a two-pronged approach for defining the project success criteria - A. Judgement by stakeholders (sponsor, team-members/customers/public), and B. Criteria based evaluation by Life Cycle phases in each of the four phases (Conceptualizing, Planning, Implementation and Closing phases).

4. WHAT IS RISK IDENTIFICATION

Risk Identification as a "step is to generate a comprehensive list of risks based on those events that might create, enhance, prevent, degrade, accelerate or delay the achievement of objectives". In purview of Risk Identification, the standard advises to include secondary risks i.e. cascade and cumulative effects of primary risks, and also those risks whether or not their source is under the control of the organization.

The identification part also addresses need of appreciation of risks - identifying what might happen considering all possible causes and scenes that indicate potential consequences.

In summary: When we identify risks, we identify consequences - irrespective of whether the cause is evident or is controllable. This mechanism could be compared to the sensory mechanism within human body. There are 4 stages of the sensory mechanism.

Stimulus (spoken words - tone and pitch, any noise), b) Sensory driver fear), c) Knowledge (correlation) and evaluation of sound (good/bad and the intensity of good/bad) by the brain, and Body response (resulting in reaction to the stimulus eg. covering rhe ear / shouting back etc.) In Identification of risk, akin to (c) above, the knowledge of intensity of risk is exercised to qualify an uncertainty as a risk or an opportunity. This appreciation of the intensity of a risk is derived on individual's prior experience of two parameters - i) Impact (or criticality to customer) and ii) Ability to overcome (capability to deliver).

This understanding is essential for right categorization of the identified risks, without which the project team would consider one high risk as a mere possibility/impact and choose to ignore it (Type-2 error - Error of Omission) OR choose another low risk as high possibility/impact and assign high resources to mitigate it (Type-1 error - Error of Commission).

5. WHAT MAKES RISK IDENTIFICATION CHALLENGING?

Through a web based survey which was sent to project managers and project stakeholders, the participants were asked to furnish their comments in open field for What do they consider, makes Risk Identification difficult?'. The 58 responses obtained were grouped into following 8 main arguments: -

1. Requires imagining out of blue. Inability to think in the future/ Lack of prior experience in the project area / Lack of competency in project team members in identifying the risks in their own areas of work / Constraints such as incomplete information on risks, as well as, and more importantly, the epistemic uncertainty of risks (the difficulty of knowing risks with certainty).
2. Difference in individual thinking patterns of project stakeholders, which may or may not align with the project's requirements in reality / Understanding of risk by the project team members / Lack of experience of the project team members and/or expertise of the PM within the field of Project. Team member's competency in identifying the risks in their own as well as cross functional areas / Lack of understanding / appreciation of the risks / Ignoring the countervailing risks.
3. There is always focus and urgency on getting the Risk Management Plan rather than identifying the Risks in detail / Low Discipline during the course of the project / Project team does not having interest in Risk Identification
4. Non-clarity in the beginning. Project's realities unwind gradually as the project team progresses through each phase / Constraints such as incomplete information on construction risks, as well as, and more importantly, the epistemic uncertainty of risks (the difficulty of knowing risks with certainty) / Setting Expectations, right Resource Skill and availability. Performance Measure, Motivation / No clear initial scope; Non availability of complete information

5. Concerned team members want to play under the table and do not want any major risk identified in their area / Lack of Transparency and support in acknowledging risks in their areas thereby impacting the ranking of risk and its mitigation plan / Most difficult factor in risk identification is getting potential risk owners to be realistic on the risks they face, and to focus on the root cause of the risks rather than the high level impacts of those risks.
6. Absence of org culture & discipline: non-availability of team members ; crisis-management is appreciated over risk-management; Much focus on deliveries and like to hear "good news" over "bad news"; Willingness to accept a problem: risk identification is also not a structured process in many organizations / Availability of all the required team members during the discussions and brain storming sessions for the risk identification / Lesser maturity of the project management culture in the organization
7. It needs to cover a wide range of parameters including and not limited to design concept, product functionality, manufacturing, finances, marketing, cost, service support etc. - representation from every field of the organization, which involves great effort, time and cost
8. Rating the risks, prioritizing, and identifying the key responsibilities in a clear and conclusive manner is not straight forward task because of many interdependencies
9. Unclear and changing requirement pose a lot of difficulty in identifying risks / Inability to forecast due to lack of organizational historical database.
10. Lack of communication on the other simultaneous development processes being done by other groups (i.e. Supplier development. Powertrain development, Manufacturing plant readiness etc.) / Too many conflicting project constraints: Project Cost, Product Cost, Project schedule, Resources, inherited Product architecture constraints, creeping Scope - a recipe to render the project too complex or non-viable.

Detailed literature review on Risk Identification establishes that a significant work has been done in putting forth and applying several Risk Identification techniques. However a little has been done to bring out the factors which influence Risk Identification process. If these influencing factors are known, it will enable the project manager to wield right strategy towards identifying the project risks.

6. METHODOLOGY

The present research programmed relied on the following multiple research methods:

- Survey: What has happened in the past, what is happening at present in the sample organizations regarding risk events, possibility of occurrences has been reported. The attributes of the sample were generalized to represent the characteristics of the universe pertaining to risk management.
- Descriptive study: The research program has also adopted descriptive method in that, the risks peculiar to the concerned sample organizations have been described and measures adopted by them were also elaborated.
- Analytical study: The existing risk management program of the sample organizations has been critically evaluated with the available facts and figures.

7. DATA ANALYSIS & INTERPRETATION

Risk management is the process of finding, assessing, responding to, monitoring and controlling, and reporting risks in the sample IT firm, just as it is in the other firms. The risk management plan for the hypothetical IT firm outlines how hazards within the company were discovered, investigated, and handled. It explains how risk management actions are carried out, recorded, and monitored across the company's various business operations.

7.1 Age of the Respondents

Table 1: Age of the Respondents

Age in years	Responses		Results
	N	%	
25-35	31	15%	Mean Score = 2.46
35-45	64	32%	Std Dev = 0.852
45-55	91	45%	
55-65	17	8%	
Total	203	100	

There are five age group classifications with class interval of ten (table 1) from all the five sectors of sample firms. 45 percent of the respondents are from the age bracket of 45-55 years. This is followed by 32 percent from 35-45 years of age. 15 percent of the respondents are the young respondents in the age group of 25-35 years. Contrastingly, eight percent of the respondents are senior and experienced respondents in the age bracket of 55-65 years. There exists a strong correlation between understanding and cognizing of life risk and business-related risk as the age and exposure advances.

The study intended to establish cause and effect relationship between age and the kind of understanding on the variety of business risks by the respondents. It can be inferred that the top management, chief risk officer and functional managers understanding on the risk management is relatively high and vivid rather than the other segments of the respondents.

7.2 Gender

Table 2: Gender of Respondents

Gender	Responses		Results
	N	%	
Male	162	80	Mean Score = 1.20
Female	41	20	Std. Dev = 0.402
Total	203	100	

Table 2 demonstrates that four-fifths (80 percent) of the 203 respondents from sample firms in five sectors are male, while the remaining respondents are female. Women are included in the study because their level and depth of perception and comprehension of business hazards and other dangers differs significantly from that of their male counterparts. It has been established fact that, the ideas are to be drawn from women but decisions must be taken by the men. In fact both are complimentary for the purpose of organizational success. A collaborative approach in risk management will take the firm to greater heights.

7.3 Length of Service

Table 3: Length of Service

Length of Service in	Responses (N=178)		Results
years	N		
Less than 10	15	8.42	Mean Score = 3.10
10–15	22	12.36	SD = 1.018
15–20	89	50.00	
20–25	35	19.66	
More than 25	17	9.56	
Total	178	100.00	

Out of 203 total respondents, stakeholder respondents are excluded while considering the length of service of the respondents. As the length of service increases risk identification and risk reduction capabilities would be more compared to less experience.

7.4 Formulation of the Risk Plan

Risk management is the process of finding, assessing, responding to, monitoring and controlling, and reporting risks in the sample IT firm, just as it is in the other firms. The risk management plan for the hypothetical IT firm outlines how hazards within the company were discovered, investigated, and handled. It explains how risk management actions are carried out, recorded, and monitored across the company's various business operations. The sample firm provides templates and procedures for the Risk Management Team to use in recording and prioritising risks. As a result, it is critical as a first step in risk management, as mentioned by the firm. In this connection, the data measured the following parameters of formulation of the risk plan in the sample information technology firm. (Table 4)

Table 4: Formulation of the Risk Plan

S. No	Statement	Scale					Total (N)	Results
		SD	D	N	A	SA		
1	The organization has a risk treatment (action) plan	1 2%	2 5%	5 12%	7 17%	26 63%	41 100%	Mean Score = 4.341 Std. Dev = 1.039
2	The organization's risk management responsibilities are recorded and understood.	2 5%	2 5%	11 27%	10 24%	16 39%	41 100%	Mean Score = 3.878 Std. Dev = 1.144
3	For attainment of organizational objectives, effective risk management system is important.	1 2%	1 2%	6 15%	9 22%	24 59%	41 100%	Mean Score = 4.317 Std. Dev = 0.986
4	Effective risk management can help your company operate better.	1 2%	2 5%	5 12%	8 20%	25 61%	41 100%	Mean Score = 4.317 Std. Dev = 1.035
5	Your company has established a strong link between its strategic goals and risk management [for example, risk identification is done during strategic planning].	1 2%	2 5%	4 10%	11 27%	23 56%	41 100%	Mean Score = 4.293 Std. Dev = 1.006

S. No	Statement	Scale					Total (N)	Results
		SD	D	N	A	SA		
6	For the benefit of all employees, management has established its risk management philosophy.	2 5%	3 7%	10 24%	9 22%	17 41%	41 100%	Mean Score = 3.878 Std. Dev = 1.187
7	Within your organization, the risk management accountability (duty) is — a. Developed, documented, and disseminated.	1 2%	2 5%	9 22%	10 24%	19 46%	41 100%	Mean Score = 4.073 Std. Dev = 1.058
	b. Understood by all concerned	1 2%	2 5%	10 24%	13 32%	15 37%	41 100%	Mean Score = 3.951 Std. Dev = 1.024
8	Your organization, while formulating the risk plan is able to allocate appropriate resources in support of – a. Risk management policy and	1 2%	3 7%	6 15%	13 32%	18 44%	41 100%	Mean Score =4.073 Std. Dev = 1.058
	b. Risk management practices	2 5%	2 5%	6 15%	13 32%	18 44%	41 100%	Mean Score = 4.024 Std. Dev = 1.107
9	In general, your company's culture reflects a risk-taking or risk-averse mentality.	1 2%	2 5%	10 24%	10 24%	18 44%	41 (100 %)	Mean Score = 4.024 Std. Dev = 1.060

It is evident from the above table 4 that, 80 percent of the respondents in the Information Technology sample firm have agreed to all the components of the formulation of the risk plan.

Furthermore, all stakeholders understand the components of risk management inside the business, and the organization is able to devote appropriate resources to support risk management policy and practices. The organization's culture has been examined to see if it reflects a risk-taking or risk-averse mentality. All of these components of risk plan formation have been assigned appropriate priority and importance by respondents ranging from 63 to 80 percent.

7.5 Causes for Risk identification in the IT Firm

A general analysis of the reasons why risks arise, the areas of impact of the risks arisen and the sources of risks needed to be analyzed after the formulation of the risk identification plan in the sample IT firm is given at Table 6.

Table 6: Organization Identifying the Risks

Statement	Yes	No	Total	Results
Does your organization identify risks in terms of —				
Reason for risk (what, how and why)	30 73%	11 27%	41 100%	Mean Score = 1.268 Std. Dev = 0.449
Area of impact	31 76%	10 24%	41 100%	Mean Score = 1.244 Std. Dev = 0.435
The source of the risk	32 78%	9 22%	41 100%	Mean Score = 1.220 Std. Dev = 0.419

The table shown above, mirror why the IT sample organization identifies risk. What, how, and why risks develop, the regions of risk impact, and the sources of risk were all evaluated in the company as part of the risk management plan, according to the study's respondents (N=41). As it deploys the forward-looking radar of risk management, a company with an effective risk process will face fewer surprises. Risk management is at the top of the IT firm's priority list due to the increasing rate of change, consumer demands, and market globalization.

Predictability is valued by the sample firm, according to the sample respondents. According to the respondents, the ability to anticipate challenges and benefits is crucial to success. For financial success, it is critical to identify major business risks in a timely way, taking into account the potential of risks crystallizing. The importance of the financial impact on the company establishment in establishing priorities for resource allocation improves control and makes formulating and conveying clear control objectives less difficult.

8. CONCLUSION

From the previous illustration in process mapping, it was noted that Environment factor is an uncontrollable parameter. This implies that the 'Environment' variable will largely be same across all the projects in an organization. Also, when External Environment was studied as one of the factors influencing the linkage between success of projects and organizational context reported that the level of importance assigned by survey respondents was same across two studies. Amongst the parameters considered under the External Environment category by them, the Client and Subcontractors are included under the factor

Stakeholders in this research, and considering them they are controllable and influence-able parameters.

Since it is un-controllable parameter, the impact on environment could not be prevented, and that it could only be mitigated by using Change Control system. Besides change control, discuss several other approaches of mitigating uncertainties in dynamic and static environments, and they even suggest methods of converting a dynamic environment into static to stabilize the environment and mitigate uncertainties. As project managers adjust scope to suit an uncontrollable environment, there is a risk of 'resolution lag' which implies unknowns that existed at the start and also those that appeared during execution. Even the system dynamics tool can help to model a system and assess the impact of different known environment risks on project objectives, however the challenge of identifying (unknown) risks still remain.

Another article which studies the impact of environmental variables on software development risk management, considers aspects such as training, organizational environment, requirement management, project manager's experience and technologies for defining hardware architecture etc. However, in this research work, we have included all these parameters under the controllable category under different factor headings - Project Manager, Project Complexity, Organizational Culture & Leadership etc. Thus, almost all of the known and controllable parameters are taken into consideration in the research.

Considering that the Environment factor is also included for developing the Risk identification model, it would not be able to draw sufficiently reasonable inputs, it being an uncontrollable parameter. Hence, for this practical aspect the Environment factor is dropped and only the other eight risk influencing factors are finalized for further detailed study of literature in next chapter.

REFERENCES

- Arkhipov, A. A., & Abramova, O. F. (2018). Modern statisics on the use of social networks of different segments of the population. Materials of X "International Student Forum - 2018", 6.
- Erven, B. L. (2009). The role of human resource management in risk management. Department of Agricultural, Environmental and Development Economics, Ohio State University, 6.
- Fedotova, M. A., Tikhonov, A. I., & Novikov, S. V. (2018). Estimating the effectiveness of personnel management at aviation enterprises. Russian Engineering Research, 38(6), 466-468.
- Krayev, V. M., & Tikhonov, A. I. (2017).Counteraction to deception in personnel work. Stavropol': LOGOS.
- Kudashkin, Y. V. (2015). Features of work of bailiffs with social networks. Collection of articles on the materials of the fifth all-Russian scientific-practical conference, *Actual problems of jurisprudence in modern Russia*, 257-261.
- Meyer, M., Roodt, G., & Robbins, M. (2011). Human resources risk management: governing people risks for improved performance: opinion paper. *SA Journal of Human Resource Management*, 9(1), 1-12. DOI: 10.4102/sajhrm.v9i1.366 .
- Ishunin, P. (2011). Personnel risk management: problems and solutions. Personnel management, 3. Retrieved from: https://hr-portal.ru/article/upravlenie-riskamipersonala-problemy-i-resheniya/ [accessed: 15 March 2019].
- Smirnova, P. V., & Tsyplakov, A. A. (2016). Selfpresentation and formation of social capital in business social networks. *Naukovedeniye V*, 6(37), 66-75.
- Tikhonov, A. I. (2019). The use of networking in staff recruitment: recommendations and referral programs. *Amazonia Investiga*, 8(19), 521-528.
- Voyskunskiy, A. Y. (2014). Social perception in social networks. Bulletin of Moscow University. Series: psychology, 2, 90-104.
- Zakharov, D. N. (2015). Sociological evaluation of images presented by social networks. *Journal of legal and economic research*, 3, 200-202.
- Zhukov, D. V., & Mansurov, A. V. (2018). Methods of identifying socially dangerous links in computer social networks. *Materials of XIX International Scientific and Technical Conference. Measurement, control, informatization*, 170-173.