

Project Management and Covid-19; Project Manager's Perspective

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Abstract: Covid-19 has hit the entire world. Almost all the projects in the world are in a crisis. The project managers in any point has not anticipated or analyzed a risk that will be enduring for a longer period and still have no any definite date of ending it.

Project risk management always plays an important role in project management although most of the risk are not given the due priority or importance. In this unforeseen situation Project manager's immediate action would be include the novel risk item to project risk register, analyze the risks and structure out mitigation procedure. This document discusses identification of risks in the current pandemic situation in main four areas; health, financial issues, freedom of movement and supply chain disruption and analyze possible risk breakdown and suggest most eminent and effective mitigation procedures project managers can apply in any kind of projects during the time in which world is living with Covid-19 .

Keywords: Covid-19, risk, risk breakdown, risk mitigation.

1. Introduction

Covid-19 is the mostly talked topic in all over the world in recent. Reported from the Chinese city of Whuhan, at the end of 2019, the outbreak has hit almost all the countries. As 10th of August 2020, 213 countries and territories reported to be affected and out of 20,026,186 cases 734,020 are dead [1].

After almost nine months, no one can truly predict how this crisis will play out. Therefore, as project managers the challenge exists for unknown time duration. Projects in every industry, sector and all over the world are getting delayed, postponed or sometimes have abandoned due to the crisis. The project managers facing the challenge of maintaining the project iron triangle; time, cost and scope [2]. Project managers has faced a ideal black swan. Projects all over the world run through a black swan event. A black swan is an unpredictable event that is beyond what is normally expected of a situation and has potentially severe consequences. Black swan events are characterized by their extreme rarity, their severe impact, and the widespread insistence they were obvious in hindsight' [3]. Current situation is an outlier, as it lies outside the realm of regular expectations, because nothing in the past can convincingly point to its possibility.. Hence this has created a situation which has never faced by projects nor project managers. Projects are in a risk that have never foreseen or evaluated. This situation has headed project risk management into more challengeable and riskier process. COVID-19 is an extraordinary crisis that will test project manager's leadership and management skills. Managers will have to make tough decisions and change the way of work [4].

CORONA-19 outbreak has set new requirements for sustainable risk management [5]. This paper discusses possible risk management and mitigation concepts that may be adapted as project managers in any industry. Mainly focusing on assessing possible risks in current situation and applying mitigation strategies that are suggested referring to new situation with many environmental and health risks.

2. Project Risk Management Process

Project risk management is considered as one of the key knowledge areas in project management. PMBOK explains project risk as an uncertainty that can have a negative or positive effect on meeting project objectives. [2].

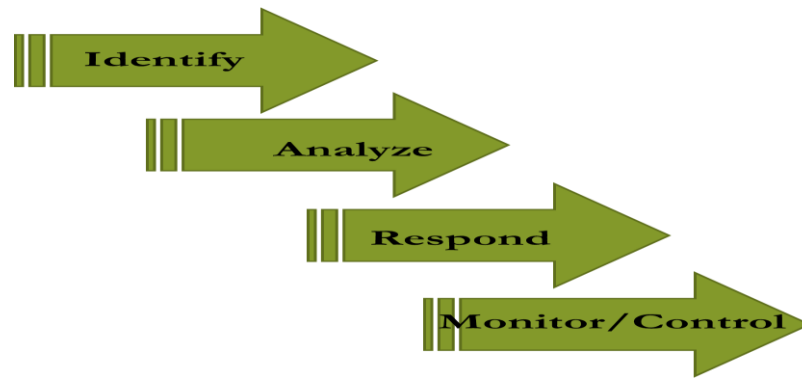


Figure 1 Risk Management Process [2]

As project managers in 2020, were they ready for the hit or the unexpected risk? Since it is never expected first thing the project manager must do now is adding the risk to risk register. Then start the risk management process as illustrated in figure 1.

2.1 Identifying Risk

The risk may be identified and analyzed in different scenarios. Starting from the least impact possible to worst case scenario and try to find out most influential factors. In project management, risk identification is done in many ways; Brainstorming, Checklists, Interviewing, SWOT Analysis (strengths, weaknesses opportunities, threats), Delphi Technique (anonymous consensus building) or Diagramming Techniques such as Cause& effect,Flow Charts, Influence Diagrams[6]. In this study the risk is identified using diagramming techniques which give clearer and more precise outcome. Worst scenario is considered as the total project failure. Key factors for project failure during the pandemic were identified and depicted as shown in Fig 2.

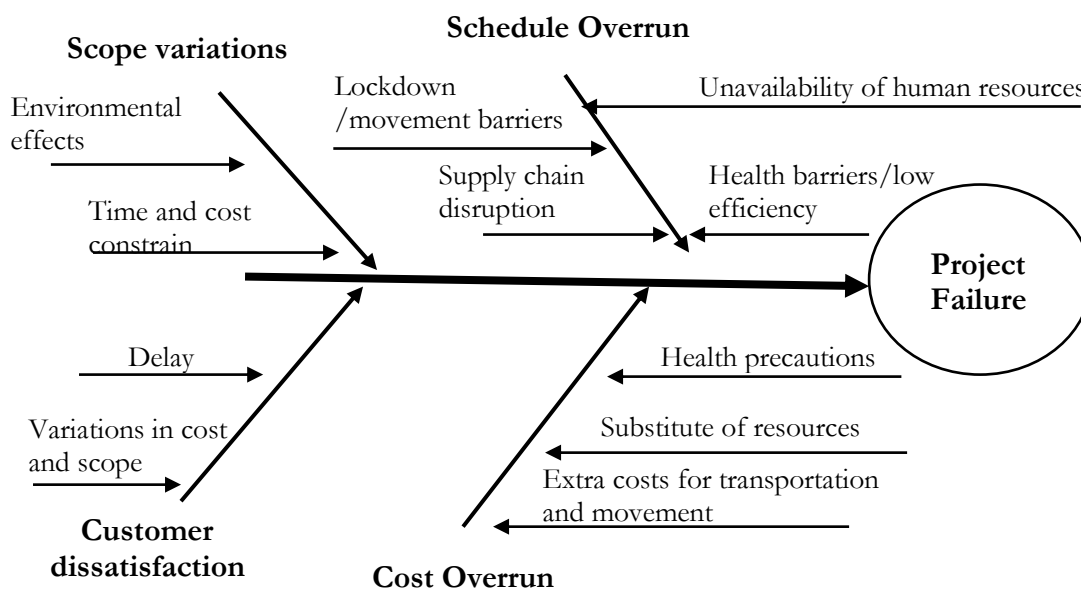


Figure 2 Possible factors for project failure

2.2 Identifying Risk

Risk Analysis process try to identify, assess, and sort the most influential factors that may be considered as high-risk factors. Risk analysis assess probability, seriousness, and urgency of each risk and quantification tools and techniques such as; Probability/Impact Matrixes, The Top Ten Risk Item Tracking, Expert judgment are used find the most critical risk factors.[6]

Most influential factors for project failure due to Covid-19 crisis identified in this study are;

- i. Health
- ii. Financial issues
- iii. Freedom of movement (transportation)
- iv. Supply chain disruption

Hill son explains a risk breakdown structure that is similar to work breakdown structure; commonly used tool in project management. The aim of the WBS is to present project work in hierarchical, manageable and definable packages to provide a basis for project planning, communication, reporting, and accountability. In the same way, risk data can be organized and structured to provide a standard presentation of project risks that facilitates understanding, communication and management [7]. Therefore, main risk factors could be further analyzed using a risk breakdown.

Table 1 Risk breakdown structure

Level 0	Level1	Level2
Project Risk (schedule overrun, cost overrun, scope variation, customer unsatisfaction)	Health	Project team infected with Covid-19
		Some members may be infected and total strength not available
		High costs for health and safety
		Coordination with other sub-contracting units
	Financial issues	Delay in receivables
		Client in financial crisis
		Overdue salary and other payments
		Increased costs due to safety and health
	Freedom of movement (transportation)	Complete lock down
		Provincial/district barriers
		Unavailability of transportation modes
	Supply chain disruption	Shortage of raw material
		Higher inventories
		Higher cost
		Higher lead time

These risk factors may be further decomposed and may get a detailed risk breakdown structure. The risk breakdown structure may use to assign responsible persons in each sub level and identified risk categories [7]. However, this paper considers most influential four factors in the pandemic and its most recent level.

Identifying and analyzing risks will lead to make an important decision on three key possibilities.

- i. whether the project will be operational throughout the crisis
- ii. whether project will consider on specific deliverables only
- iii. whether the project will be freezed or cancelled.

2.3 Responding to Risk

When responding to identified, asessed risks, management actions should be specific to reduce likelihood or impact, depending on management’s agreed-upon risk tolerance and the strategic needs of the business.[8] The most common risk responses include: avoid (get out), accept or retain (monitor), mitigate (institute controls) and transfer or share (partner with someone)[8].

However, the flexibility of responding to prevailing risks are very much restricted in this pandemic situation. There will be no possibility of avoiding the risk when the existing projects are considered. Most relevant responding methods for this situation will be accepting the risk and risk mitigation.

Risk responding for different risk factors too could be structured into different levels.

2.3.1 Health

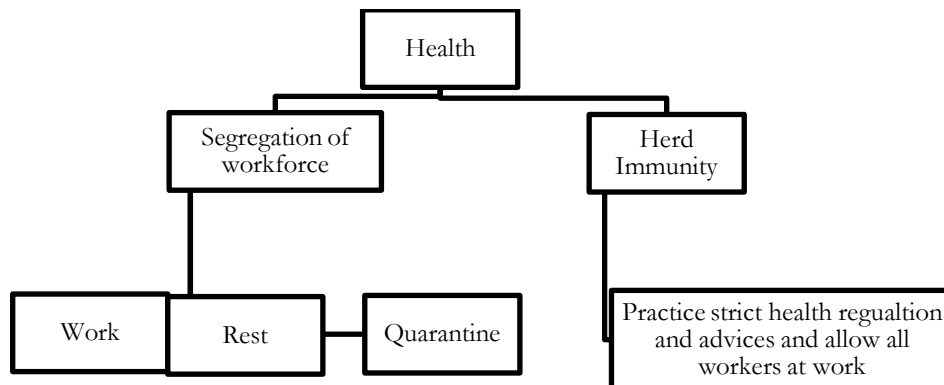


Figure 3 Responding to risk - Health

Above structure in fig 3 suggests mitigation process that would be possible to adapt in projects. However, the segregation of workforce method is applicable in large organizations and large projects with identified project deliverables. This method can be used in the military, and larger projects in which workforce is larger and can be segregated into teams of work, rest and quarantine during a specific period. Second mitigation option is allowing all the workers. This option is expected to practice in small projects.

2.3.2 Financial Issues

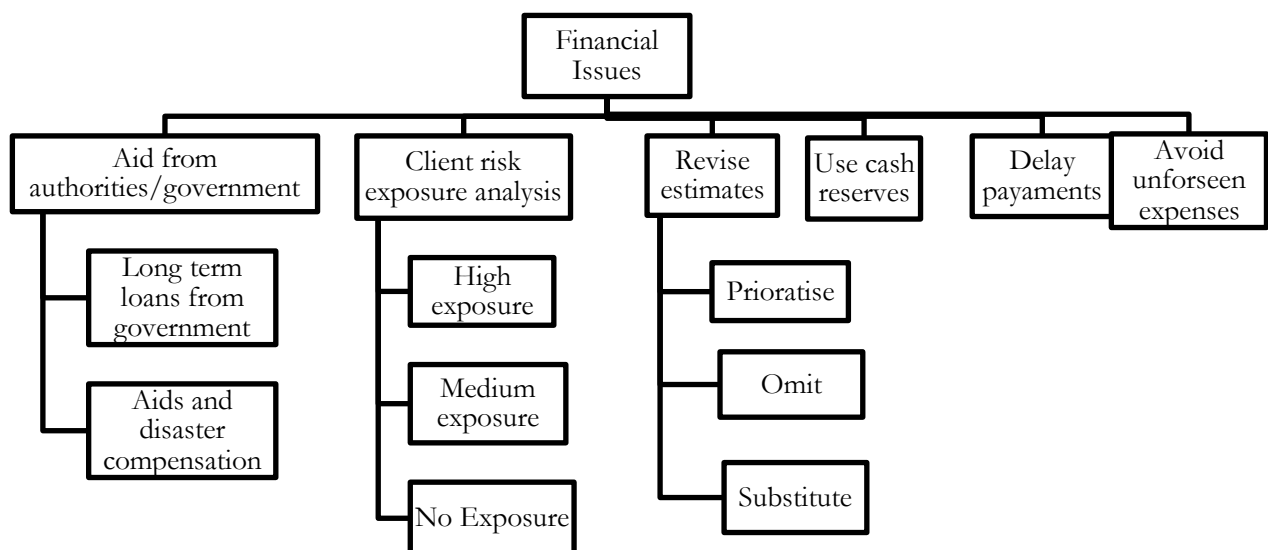


Figure 4 Responding to risk- Financial Issues

Possible actions in financial risk mitigation is depicted in fig 4. At a crisis hit by whole world with an unanticipated financial needs, restrictions and obligations finance management is a huge challenge for a project manager. First thing a project manager would look forward will be avoiding unforeseen expenses and delay budgeted payments as much as possible. Vigilant for any aids or compensations provided by government or other funding organizations will be a helpful source in order to mitigate financial risk. Client risk exposure is another important factor to be analyzed. At this type of a pandemic all the projects and clients are not exposed to risk at a same level. Some projects and clients are get benefited from the situation because of the type of business or the industry they are engaged in. In such situations project managers get the benefit from unaffected clients and try to make a balance in financial condition of the project. Revising estimates is another possible mitigation action of financial risk. Estimates may be revised either by making priorities, omitting or substituting design/ material requirements. Final mitigation action would be using cash reserves. However, the sustainability of selecting this option highly dependent on available cash reserves of the organization.

2.3.3 Freedom of movement

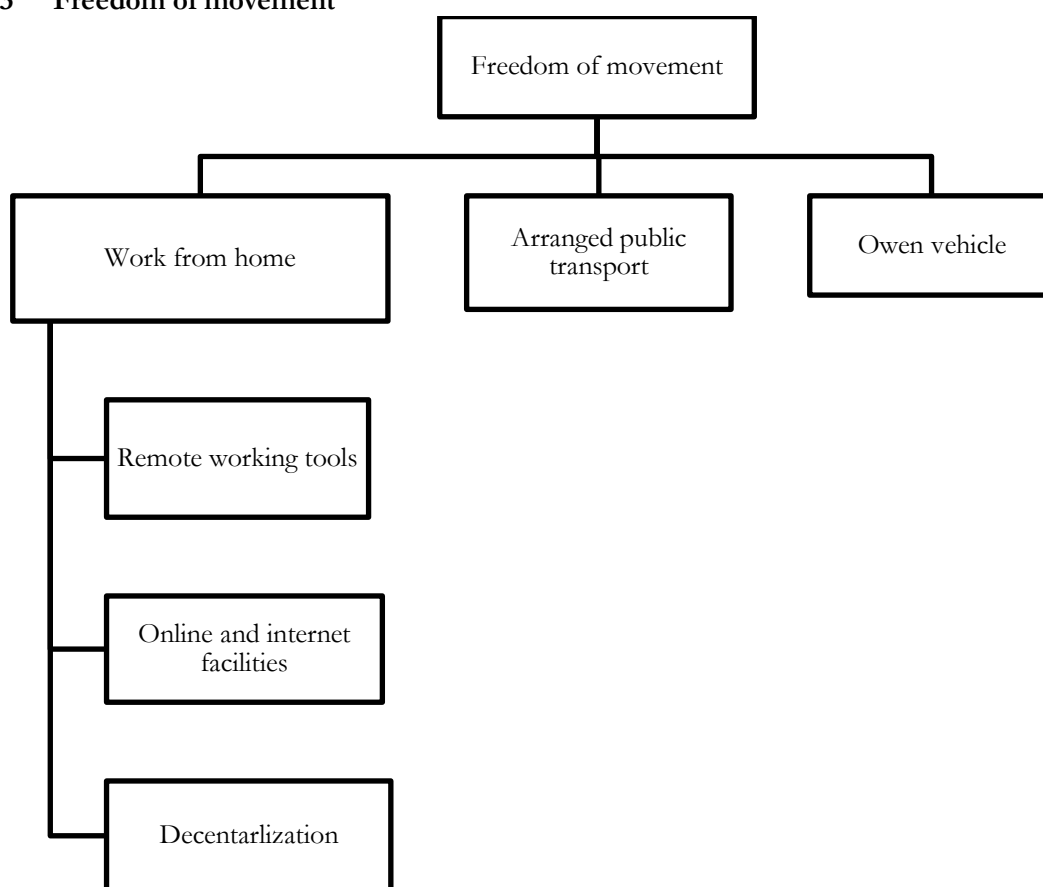


Figure 5 Mitigation of risk - Freedom of movement

Freedom of movement is restricted by governments to minimize social mixing and contamination. In the restricted environment, project managers may decide to allow working from home as much as possible. That is the common approach of many organizations. However, there are issues and practical difficulties in working from home in many projects. In such a situation government intervned arranged public transportation or company owned transportation facility could be arranged. For project team vehicle allowance could be provided to minimize health risks and hence risks of project failure risks due to restrictions in movement.

2.3.3 Supply chain disruption

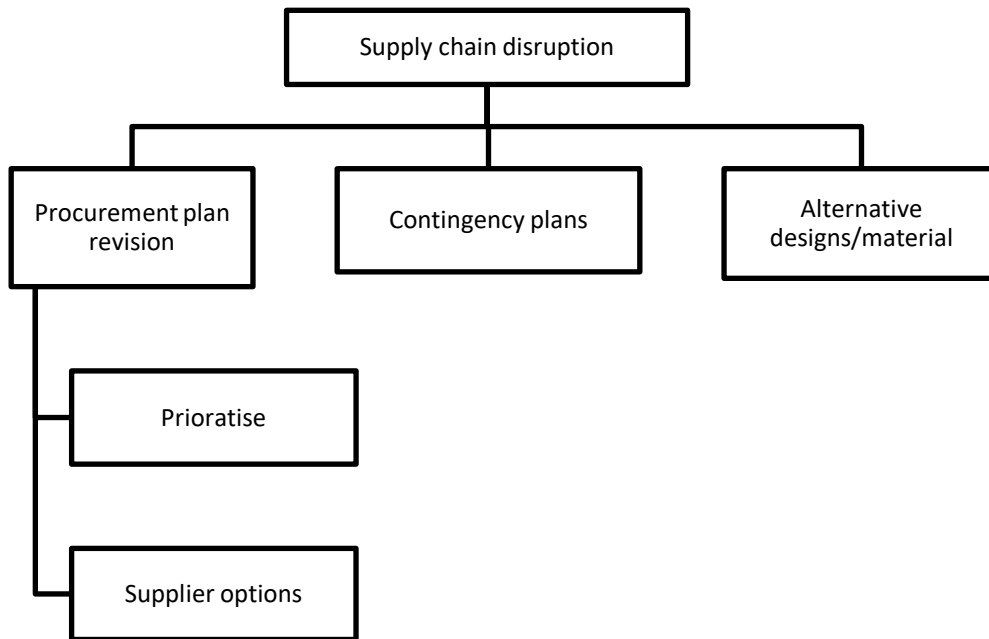


Figure 6 Mitigation risk - Supply chain disruption

Disruption of supply chain is one of the significant risks identified as influencing project failure in the current crisis situation. Most of the imports are restricted due to travel ban conditions in different countries. Some of the manufacturing organizations are completely closed. Hence there is a disruption to supply chain creating an unhealthy situation to most of the projects due to material shortage and high prices. Project manager may revise the procurement plan with identified priorities and find optional suppliers or sellers. Contingency plans for projects which should be continues is essential. Project managers at such industries such as construction, chemical plant in which the delay costs much higher and irrecoverable must cater for contingency plans in order to avoid disruption to project work due to the disruption of supply chain. In some countries due to the crisis total travel bans imposed and in such instance as the last option project manager may have to suggest a design change or change the project scope

2.4 Monitor/ Control of Risk Management Process

Monitoring and controlling is a continues process. Identified risk mitigation procedures should be adapted by the project manager in a controlled and monitored environment. This process consists of two components;

- i. Communicate
- ii. Frequent update

Clear precise, consistent and transparent communication protocols with project team, clients and other authorities is essential in this crisis situation to boost up of all the stakeholders and to make sure project is at minimum risk. Proper and continues updates; initially daily updates, then weekly and when the condition is improved, biweekly updates to all project team and other stakeholders are suggested.

In addition, refresh risk analysis and consider using simulation tools to assess potential cost and schedule outcomes at various confidence levels would be safer and more suitable for sustainable risk management process [9].

3. Conclusion

As the COVID-19 virus impacts daily business operations, project manager should be vigilant and proactive in navigating the uncertain situation. Project Managers should be able to identify possible risk in this unexpected state and consider risk management as the most vital act at this point. This paper discussed adapting risk breakdown structure for investigating risk factors and proposes risk mitigation structures to four of the identified, most influential risk factors during the crisis.

While no one can truly predict how this crisis will play out, assessing risks and preparedness, adapt most suitable risk mitigation activities in routine basis, being transparent with team and clients, and adopting continues reviews and improvements will help project managers to survive through the downturn

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