Project Risk Management in infrastructure development: Pushing the boundaries in a major upheaval

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Introduction

On the face of it, the concept of project risk management is quite straightforward. Because projects by their nature involve new activities under new circumstances designed to achieve new objectives and benefits, they have not been done exactly like this before (although some projects may have been very similar, which is helpful). Consequently, the various activities involved in the project will not go exactly as planned. Some activities may go better and others, more often that not, will take longer, or cost more, or both.

Most project estimates are compiled on the bases of optimum conditions, in other words, hoping for the best. That condition rarely applies in real life – things happen. So, as practicing project managers we like to set aside a certain reasonable amount of time and cost to cover such eventualities. This amount is usually arrived at by examining each activity, or at least homogeneous groups of activities, and then assigning some percentage margin based on experience or prior results. Having gone through this exercise, we may also gain a good insight into which activities may need more careful supervisory attention than others. This is all a proper part of a project estimate.[1]

Since a majority of small to medium sized projects are typically "run of the mill", and where the outcome of the project is fairly well understood, the subject of project risk management may be given little attention, if any. This is especially true of projects where the work is mostly intellectual rather than craft, such as in administrative changes, or Information Technology. In such cases, it is relatively easy to back track and redirect current efforts if that makes sense, and the cost of discarded work is minimal.

This is not true in the case of projects where significant amounts of craftwork are involved such as in building, engineering and infrastructure works. This is because, depending on the stage of the project, especially in the execution phase of a so-called "construction" project, significant but unexpected amounts of physical "demolition" and "re-work" can often be involved if someone decides to change direction after part of the works have been built.

Change in direction

Why would anyone want to "change direction" compared to the original plan? There can be all sorts of reasons. In the case of public works, for example, as the original work progresses, the public begins to see the impact of the final works and, for whatever reason, political or otherwise, objects vociferously. A political decision is then taken to temporarily cease progress while a compromise is found. Or a safety consideration may call the operation to a temporary halt. Or the decision to change is purely political, of which there are many examples. Or a better solution is found that may result in a better outcome, or a cost reduction, and progress is interrupted while a decision is made. And so on.

But in the last example, the better outcome and/or cost saving may only be achieved at higher risk, perhaps much higher risk, than doing it the old "tried and true" ways of doing things.[2] But how is the project manager to decide? Of course there are protocols to follow and interested parties to consult but, in the final analysis, the project manager has to decide. Careful examination and analysis will help, but

in the end, the decision will come down to the project manager making a choice selection based on his or her intuition or "gut feel". In other words, how "risk-tolerant" or "risk-averse" that manager is.

Risk-tolerance, in this case, is defined as "The extent to which a risk could affect a situation, should it occur (i.e. the risk exposure) without triggering a response." Another way of looking at it is "The threshold of risk exposure that, when exceeded, will trigger a response." The important constraint here is "when exceeded"! Either way, in this case this limitation can be considerably extended by taking "all reasonable precautions", or even "excessive precautions" to ensure that the contemplated risk event does not occur.

The converse of this condition is that the manager may well be risk-averse, either because that is a part of his or her personal makeup, or that the possibility of failure is so high, and the consequences so grave, that even the thought is far too much. In such cases, being risk-averse is not such a bad thing.

Developing a Project Risk Management Strategy[3]

Overview
In any large or significant project, the ability to manage risk well should be a core competency. It must be supported by a strong risk conduct and an effective risk management approach. Project risk is defined as the potential for loss or undesirable outcome with respect to the project's intended product, its timely delivery, its ultimate cost, and its capability to deliver the intended benefits.

The risk profile of the project in question and the "Risk Appetite" of the responsible organization are also important factors. Major risk categories include: changing market conditions, liquidity and funding, insurance, regulatory environment and compliance, operational reputation, the competition, and credit availability.

Example Mission Statement:
Build corporate value through leadership in the strategic management of risk.

Suggested objectives of General Risk Management
- Provide independent and objective oversight of the management of significant risks arising from the Program Management and/or single project product development activities;
- Maintain an effective project management-wide risk management process through working in partnership with all areas of the program;
- Ensure the continuous improvement in risk management processes, tools and techniques; and
- Promote a strong attitude to risk acceptance and its conduct.

Suggested risk management priorities
- Risk appetite – Articulate what risks project management is prepared to take;
- Risk conduct – Define how the program organization should operate;
- Risk governance and controls – Focus on the maintenance of effective program-wide risk management processes;
- Support program-wide product development strategies by maintaining strong partnerships, balancing risk and reward, and striving to achieve a shared responsibility for risk compliance within the total program environment;
- Risk infrastructure (people, operating plan and systems) – Deliver efficient and scalable risk and compliance infrastructure comprised of highly competent professionals supported by appropriate

training/development, tools and techniques; and
- Managing regulatory environment and relationships – Comply with regulatory requirements and expectations, and maintaining strong regulatory standards.

General Approach

Top and emerging risks

The risk environment is not static. An important component of an enterprise risk management approach is to ensure that top risks which are evolving or emerging are appropriately identified, managed, and incorporated into the existing risk management assessment, measurement, monitoring and escalation processes.

Risk oversight activities that can lead to identification of new, evolving or emerging risks include control mechanisms (e.g. approval of new projects, initiatives, transactions or products), business strategy development, stress testing, portfolio level measurement, monitoring and reporting activities, and the ongoing assessment of industry and regulatory developments

Risk conduct

Risk conduct is a shared set of behavioral norms that sustain core values, protects and safeguards project stakeholders' values and integrity, as well as protects the organization from undue or exceptional and unnecessary risk. In other words, risk conduct defines how the program organizations should operate by instilling a mindset relating to risk and "doing what is right" consistent with these values and Code of Conduct.

Effective project risk management includes four key components in particular. These are:
- Attitude towards project risk at the top of the organization and middle management;
- Accountability that is shared across all project management components and their participants;
- Recognition and appreciation linked to the assigned risk profile for the project or component in question, given the organization's risk appetite for the program of concern;
- Nevertheless, providing an effective challenge that promotes constructive discussion of different points of view on the compounding of risk levels being taken; and
- A strong ethical culture of integrity and compliance with the organization's established code of conduct that addresses the variety of ethical and legal concerns that face project management participants on a daily basis.

Risk appetite

Risk appetite is the amount and type of risk a project is capable of sustaining in pursuit of both its individual project objective as well as the combined risk of the whole program or portfolio under the same management. Three aspects need considering:
- The amount of unrecoverable financial investment-to-date;
- The amount of "capital" investment, including further cost-to-recover, staff morale, and public opinion; and
- Corporate liquidity during the process of abandonment and recovery.

Summary of recommended actions

In conclusion, consider adopting he following recommended Risk management principles or actions:

1. **Effectively balance risk and reward** by aligning project management business strategy with risk appetite, avoiding excessive concentration of risk through diversification, pricing appropriately for risk through preventative and detective controls, and transferring risk to third parties;
2. **Share responsibility for risk management** with program and project component managers since they are responsible for active management of their respective risks;
3. **Make program and project decisions based on an understanding of risk** through rigorous assessment of risks associated with the products, product development activities, and subsequent benefits that will be generated;
4. **Avoid activities that are inconsistent** with the code of ethics, conduct and corporate policies that could otherwise damage the organization's reputation and ability to perform;
5. **Apply proper focus on the client's perspective** of the on-going programs and/or projects, including actions and intended actions that must be clearly understood by these clients; and
6. **Use judgment and common sense** for managing risk through out the program and/or on-going projects.

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[1] The whole process of conducting a project risk management component of a project's management is typically explained in some detail in any competent book on managing projects, e.g. *A Guide to the Project Management Body of Knowledge* published by the Project Management Institute, PA, USA

[2] A few examples from the author's experience: 1. In building foundations in tidal waters, do you work only at very low tides (takes much longer) or do you build a cofferdam for the work (quicker but much more costly)? 2. In highway maintenance work, do you work only at week ends (takes longer) or do you shut the road down during the week (quicker and cheaper, but much more disruptive to users)? 3. In a high-rise project, after the foundations were completed for a concrete structure, the property was sold to a remote buyer to avoid bankruptcy. With interests in a structural steel company, the new owner ordered a change from a concrete structure to steel. Under the circumstances, the risks, opportunities and other ramifications were considerable.

[3] **Note**: In the suggestions that follow, the framework for this presentation has been adopted from a careful study of a most valuable paper provided in the *Royal Bank of Canada Annual Report* for 2014, published in March 2015. In the RBC study, this Risk Management approach is applied to financial investments.