The Myth of Predictability

Risk Driven Strategies for Major Capital Projects

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The current financial crisis raised many concerns about current decision-making practices. It became clear that executives in every industry and across the globe were, perhaps unknowingly, making critical decisions without a complete understanding of the risks involved – of course this is also true for decisions to invest in major capital projects.

Today, any organization with a significant CAPEX portfolio is likely to also have significant risks to its future free cash-flow as a result of potential cost overruns on its capital projects and delays to first production. These levels of risk, and the associated uncertainties surrounding the CAPEX investment decision, have become a significant executive concern. For example, imagine how the executives of PetroCanada must have felt when the cost trends for their Fort Hills project became apparent:

> *Petro-Canada said yesterday its (Fort Hills) oil sands project will undergo startling budget revision as costs have soared from $14.1 billion to $23.8 billion in slightly more than a year… "I agree it is almost unfathomable," William Roach, UTS' (a partner in the project) chief executive said. Shares of all three partners were hit yesterday ... The global credit crunch means even Canada's oil sands projects will face difficulties accessing capital.*
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> Financial Post, September 2008

To put this cost overrun and its impact in perspective consider that PetroCanada's share of the overrun, $5.8 billion, on this single project considerably exceeded its $3.8 billion operating cashflow for the previous year.

We do not mean to single out one company. Far from being unusual, this experience has become quite typical. Whether it is Shell's Sakhalin II project (sanctioned at $10 billion, actual cost in excess of $28 billion), or Boston's Big Dig (budget at $4 billon, actual cost $14.6 billion) the lack of predictability of most major projects has become painfully apparent.

The problem of capital project predictability is serious – and it is time for a serious look at what to do about it. We suggest that conventional approaches to project- and risk-management are no longer sufficient, and a complete rethinking of how we assess risk, make decisions, and manage projects is required.

The Dilemma of CAPEX Predictability

Of course, every decision-maker yearns for predictability. To predict is "to make known in advance…" (re: Free Online Dictionary). Decision-makers in major capital projects have long held a strong expectation that the developers and engineers proposing projects will be able to "make known in advance" the cost and time to complete with sufficient accuracy for a responsible investment decision.

Interestingly, a synonym for predictability – ("the quality of being predictable") is banality (to be "drearily commonplace".) Surely these decision-making executives would not complain if predictable cost and schedule outcomes were "drearily commonplace." But, as we have seen, predictable project outcomes are far from commonplace – in fact the reverse is true.

In most organizations, management continues to expect predictable project outcomes. Naturally, when projects fail to perform predictably, steps are taken to improve the performance of project teams

in hopes of solving the problem. But what does one do if the level of risks associated with the project's size, duration, technology location, and prevailing economic conditions make the required predictability impossible to achieve?

The CAPEX Predictability Dilemma falls to those decision-makers responsible for the decision to fund (i.e., sanction) a capital project. They may be a corporate executive, a member of the Board of Directors or the Audit Committee, the Chief Financial officer, or the head of a business unit. These participants in the investment decision process are conflicted by a dilemma with these two horns:

- On the one hand, CAPEX decision-makers require (inter alia) a certain level of confidence in the prediction of how much the proposed production asset will cost as well as how long it will take to achieve the expected revenue stream.
- On the other hand, CAPEX decision-makers must acknowledge the hard truth that, when all risks to a project's outcome are considered, this desired level of confidence may simply be unattainable.

Yet a decision must still be made.

We suggest that it is best not to view the unpredictability of major capital projects as a problem to which there is a solution. Instead we believe solutions are found when we think of it as *a dilemma that must be continuously managed*. Managing the CAPEX Predictability Dilemma requires navigating between the need for confidence and the need to manage risk.

Haven't Project- and Risk-Management Best Practices Improved CAPEX Predictability?

The industry has not been standing still. Knowing the impact of project performance on financial results, owners, contractors and suppliers have made huge investments over the years to improve the ways they estimate and control the cost and schedule of major projects. Much has been done to institutionalize best practices; perhaps the most important improvements have resulted from the implementation of phased decision processes that stress the importance of evaluating alternatives and investing the time and effort for extensive project definition prior to the final investment decision. Significant improvements have also been made in the information systems used to estimate and control cost and time, and a variety of education and training programs have improved the knowledge and skills of project managers and teams across the globe. Best practices have been defined, expanded and continuously improved, and lessons learned have been widely shared.

Have all these efforts improved predictability? Our answer is yes – but clearly not enough. There is no doubt that considerable improvements in the performance and professionalism of project managers and teams have been achieved. But it is also painfully apparent that the continuous improvement of the conventional approach has not been sufficient. Even projects that positively reek of best practices often end up joining the ranks of "train-wrecks".

So, in spite of all this effort, the level of executive concern and frustration about the unpredictability of project outcomes is at an all-time high. For example, a survey of the oil & gas industry by Booz Allen Hamilton revealed that "more than half of the executives said they are dissatisfied with their company's overall project performance … (and) believe that many traditional ways of doing business are anachronistic." This survey went on to say: "Even major corporations cannot afford to miscalculate the risks. And yet, they do not seem to have a good grasp of how to manage the risks associated with capital projects."

So what is missing? What is needed that we have *not* done so far? Let's start by considering whose problem this really is.

The CAPEX Predictability Dilemma Cannot be Delegated Down

The conventional approach to project – and risk- management has been focused on the project level of the organization. Thanks to the enormous efforts made over many years, it is now quite clear what project managers and teams should do, and how they should do it. There is a large population of people who can do these project planning and execution management tasks, and plenty of providers of tools for them to use.

What is needed now is a change in focus from the project level to the level at which responsibility for strategic decision-making, planning and organization effectiveness truly lies. This is, of course, the executive level.

Effectively managing CAPEX project portfolios requires Strategic Risk Management: charting the right course between the horns of the CAPEX Predictability Dilemma while preserving the flexibility and adaptability needed to deal with the constantly changing risk environment faced by most major projects today. And this is an executive – level responsibility.

Fresh Thinking is Required

The entire body of knowledge of project- and project risk-management is based on fixing and achieving project objectives. But it is worth noting Peter Drucker's thoughts on this:

> *Management by Objectives works – if you know the objectives. Ninety percent of the time, you don't.*

If the pursuit of predictable project objectives is, in fact, destined to be an exercise in futility, we need to think about project – and risk - management in a whole new way. This new way of thinking requires us to completely rethink and in many cases reverse well-accepted mindsets and management models. This new way of thinking encourages us to let go of:

- Decision-making based on single-point/deterministic values of project cost and time, and, instead, become comfortable with decisions based on uncertain estimates.
- Planning based on the perceived need to transfer or avoid risks and, instead, become comfortable with plans that accept and manage the risks that are rightfully ours
- Organization strategies based on minimizing headcount and, instead, become comfortable with organization designs based on risk-driven competencies
- Execution management based on fixed objectives and, instead, become comfortable with an adaptive, flexible management style recognizing that objectives may need to change as the multi-year life-cycle of a major project unfolds.

Strategic Risk Management is an open, adaptive way of thinking that allows us to better understand, embrace and even exploit project risk so the CAPEX Predictability Dilemma can be continually and successfully managed.

Summary

Projects really can be predictable; the "myth" is thinking that cost estimates and schedules are more precise than they actually are. Recognizing the many external forces that impact project outcomes leads to a better understanding of the limits of a project manager's ability to ensure that a certain outcome is reached. Instead of viewing predictability as something that can be required, managers have better results when they view it as something that must be managed.

About Westney Consulting Group, Inc.

Founded in 1978, Westney Consulting Group is internationally recognized for thought leadership in the risk management, strategic planning, and organizational effectiveness of large, complex engineering and construction projects. Based in Houston, Texas, the company advises owner/operator, developer, and financial executives in the energy, chemicals, mining & minerals industries.

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