



Front-end strategies to reduce project risks

By Steve Rusk

Mining is an industry of big projects that require large investments. Although large projects have more financial investment at stake, reducing risk is important for all projects. By adopting strategies to address economic, technical, environmental and social risks – and their increasing impact, if these risks are carried forward – risks can be reduced and project profitability protected.

Understanding the order of magnitude impact

When looking at project risks and their implications, it is important to fully understand that mining project risks can have an order of magnitude increase in cost if not addressed. The impact of risk on cost, schedule, quality and project success is exponentially greater in the future than it is today. For example, a change in infrastructure design may cost a few thousand dollars to correct during the project's conceptual phase. If this change is carried forward to scoping, the cost will be tens of thousands, to feasibility, hundreds of thousands. If the design change is not made until the construction phase, the cost to correct can increase to millions of dollars.

Understanding the order of magnitude increase that risk can have on costs helps project teams establish and align priorities and focus on identifying and addressing uncertainties and risks early.

When cost, schedule, and quality decisions are made in silos

Every project decision has an impact on cost, schedule and quality. These three variables extend throughout the project, where technical and commercial issues are commonly managed by separate groups within a project team. However, detailed discussions and decision making related to those issues are not always a shared experience. A strategic path developed to deal with current and future issues in one group may have unintended consequences in another. For example, a contracting strategy developed to mitigate financial or complexity risk may in fact have a negative impact on technical or execution risk.

Decision making needs to be integrated in order to consider the impact of decisions on all three variables.

Start with a holistic view of decision outcomes

Organizations that take a holistic approach to understanding the outcomes of decisions – and indecisions – have the wide view necessary to implement strategies across groups. Understanding the downstream cost of risk and the value of mitigating it early also contributes to success.

There are three strategic approaches that project development teams can implement to reduce risk at the front end of a project:

1. *Well understood priorities* Along with scope, priorities related to cost, schedule and quality are needed to guide decision making. Project leaders must not only establish but communicate the priorities to the project team. Better informed decisions are made when the entire team is aligned with the priorities and understands why they are in place.

2. *Integrated evaluation* Project teams can successfully reduce risk and uncertainty when they adopt integrated decision making that considers how options will impact cost, schedule and quality. Since these variables are interdependent, separating them – or making one department responsible for just cost – potentially increases rather than decreases risks.

3. *Complete each stage before proceeding* Deferring decisions is deferring, not reducing, risk. A decision that is deferred due to uncertainty, ambiguity, indecision or non-decision compromises the scope of the project and carries risk forward at greater cost. Project teams should move to the next stage of the project only when the current stage is complete. Where circumstances require decoupling – i.e., delaying portions of the work – within a project, it is critically important to fully understand the consequences of advancing parts of the project out of sequence.

Implementing these strategies requires adopting project management best practices and a project team with a deep understanding of control strategies and processes to manage uncertainties. The project leaders need strong communication skills and the ability to educate the entire team on the scope and priorities to maintain alignment and inform decision making. The project team needs technical expertise and diverse experience to establish scope and priorities.

With the right team, scope, priorities and control strategies in place, mitigating risk can and should start at the front end of project development. The right team includes members with diverse experience who understand the value of identifying risk from a holistic point of view. When the project team is aligned on scope, priorities are well understood, and the cost-schedule-quality equilibrium is considered as part of the decision-making process, project risk can be successfully managed. **CIM**

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