



So you want to Fast Track your project!

PDAC Session – Building the mine we want to see: Advancing feasibility to construction

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Contents

- Why Fast Track?
- Up Front Planning;
- Project execution strategies; and
- Key takeaways.

Why fast track?

- Speed to market:
 - Hit it while it is hot; Beat competitors to market;
- Attempting to reduce cost
 - Don't over-study, but can actually increase cost
- Regulatory, social, or permitting considerations;
- Funding availability;
- Tax, lease or royalty considerations;
- Simple/known geology, metallurgical, technical, and social factors.



Once you balance the **additional risk** associated with fast tracking a project and determine that the **benefits to your organization** outweigh the risk you must:

Communicate the justification and priorities for fast tracking to the technical and management teams.

They can then help set priorities and execute more effectively. They can also help mitigate the inherent risks of fast tracking.

Upfront planning – a Process

- Define Key **Fundamental Factors**:
 - Social and Environmental Factors including timing;
 - Location of project – key country characteristics that impact the project;
 - Understanding the mineral market and how the project fits in the market;
 - Funding Mechanisms and requirements to access those funds;
 - Construction delivery strategy; and
 - Selection of the execution team including the upfront engineering consulting team(s) and the owner's team.

Funding Mechanisms / Ownership

Funding Mechanisms

- Private Funding;
- Public Equity Raise;
- Unsecured and Securitized loans;
- Streaming deals;
- Offtake funding;
- Joint venture partners; and
- Combinations of these.

Company Characteristics

- Privately Held;
- Public Stock;
- Conglomerate;
- Vertically Integrated;
- Subsidiary; and
- Size

The combination of funding and ownership characteristics dictate the type of risk and required levels of study, reporting requirements, type of project execution/construction delivery, and environmental Diligence will be required to provide for final funding.

Construction and Project Delivery

- Self Construct;
- Engineer Procure Construct (EPC - Design/Build);
- Engineer Procure Construction Manage (EPCM);
- Build, Own, Operate, Transfer (BOOT); or
- Other delivery schemes; and/or
- Combinations of delivery methods.

It is important to consider the delivery up front to generate a strategy that marries the construction delivery strategy with the financing portion of the project as well as the Owner's strategy for operating or sale of the project.

Project Delivery Team

Owner's team

- Executive team;
- Management team;
- Technical team;
- Operations team.

Technical team

- Consultants;
- Vendors;
- Contractors.

Support Team

- Legal;
- Financing
- Regulatory

The Project team must be aligned with the key strategies and non-technical drivers to determine the levels of staffing and type of team that is necessary. Key to Fast Track execution is including key players early in project development and design that can execute on construction of the project. Experience, expertise, and substance are necessary for fast track execution.

Project Execution Strategies

- Identify and understand **nature driven** aspects of the project;
- Develop a **realistic comprehensive project schedule** to manage the process – Don't oversimplify this step!!!;
- Create a **simplified technical economic model** to test assumptions and keep the overall project on track – if it isn't economic, it won't matter how well you have executed the project development.
- Work key design **activities in parallel but implement independent project reviews** and cross-functional reviews;
- Establish a **living risk register** early in the project and document mitigation strategies that remove or reduce risks;
- Establish **clear decision makers** and **criteria** for making decisions.

Nature Driven

Evaluate and understand the key nature driven aspects of the project. These are “things you can’t change or have to mitigate”:

- Geology and geometry of the resource;
- Geochemistry;
- Hydrogeology (ground water);
- Geotechnical (rock strength and characteristics);
- Metallurgical characteristics;
- Climate related; and
- Geography related.

Spend the correct amount of time on these areas to ensure and adequate understanding is achieved. They are the building blocks for the remainder of the project.

Project Schedule

- Develop a realistic comprehensive and detailed project schedule to manage the process – Don't oversimplify this step!!!;
- Include the key activities that drive the project;
- Link activities so that you can understand impacts of the various activities and can manage the process to accelerate or mitigate activities that take longer than expected;
- Allow for some slack in the schedule for unexpected issues...it is unlikely that there not to be upsets to the schedule;
- Make it a living schedule, update it often, test impacts of acceleration and bottlenecks, use it as a tool.

Create a simplified Strategic Model

- Create a simplified technical economic model to test assumptions and keep the overall project on track;
- Start with a simple model;
- Add complexity as the project progresses, but keep functionality and the ability to input alternatives to test potential outcomes and value drivers for the project;
- A complex financing model may or may not be the best tool for operational adjustments and changes.

Execute activities in parallel but beware of the risks

- Identify key project activities that can be conducted in parallel;
- Not all work can be conducted in parallel, but identify those that can be conducted in parallel and have the teams responsible move them forward understanding the inter-relationships with other activities on the Project;
- Implement frequent independent project reviews and cross-functional reviews to confirm that the parallel work streams are continuing to mesh and allow for adjustments in the various activities;
- Understand that the results of this tactic will NOT be an optimized solution. This is one of the tradeoffs that you accept by fast tracking.

Risk Recognition and Mitigation

- Establish a living risk register early in the project and document mitigation strategies that remove or reduce risks;
- Comprehensive listing including all areas of the project including financing, environmental, technical, social license, schedule, market, and all other key areas.
- A defined risk matrix should be used for consistency of ratings and an impact rating system should be included in the register.
- The risk register should be reviewed regularly and progress measured.

RISK RATING MATRIX							
LIKELIHOOD RATING	A	Happens all the time with high certainty. Will happen with very high certainty.	L1	M1	H1	H2	H3
	B	Happens frequently with high certainty. Will happen with high certainty.	L2	M2	M3	H4	H5
	C	It could happen. Seen it happen before.	L3	L4	M4	H6	H7
	D	Reasonably certain it won't happen. It may happen at some point.	L5	L6	M5	M6	H8
	E	Doubt it could happen. May occur in exceptional circumstances.	L7	L8	M7	M8	H9
			1	2	3	4	5
IMPACT RATING							
Dollar Impact	Revenue (variance to budget)	< 1 %	1 - 5 %	5 - 10 %	10 - 20 %	> 20 %	
	Cost (variance to budget)	< 1 %	1 - 5 %	5 - 10 %	10 - 20 %	> 20 %	
	Project Schedule	< 2 weeks	2 - 4 weeks	1 - 3 months	3 - 6 months	> 6 months	
	Project Budget (variance to budget)	< 1 %	1 - 5 %	5 - 10 %	10 - 20 %	> 20 %	
	Value (reduction to NPV)	< 1 %	1 - 5 %	5 - 10 %	10 - 20 %	> 20 %	
License to Operate	Legislation, Laws, Regulations that cause:	Increased reporting standards and regulatory burden	Fall out of compliance and increasing scrutiny from regulators	Temporary shut down and operating uncertainty	Reduced mine life or regular stoppages	Complete shutdown	
	Stakeholder Relations & Reputation (Operations)	Potential stakeholder opposition	Some stakeholder opposition	Moderate stakeholder opposition and bad publicity	Strong stakeholder opposition and production interruptions	Vehement stakeholder opposition and mine shutdown	
	Stakeholder Relations & Reputation (Corporate)	No impact on stakeholder confidence in management of the company	Limited impact on stakeholder confidence in management of the company	Medium impact on stakeholder confidence in management of the company	High impact on stakeholder confidence in management of the company	Loss of stakeholder confidence in management of the company	
Safety	Environment	Minor incident, no cleanup and no warning	Incident involving 3rd party supplier off-site (eg. consumables spill)	Minor incident, fine or written warning. Some remediation required	Major incident such as a leak or spill causing environmental damage	Detrimental incident such as catastrophic tailings dam failure	
	Health & Safety	Hear Miss	Minor Injury	Severe Injury	Death or Severe Injury of Multiple Employees	Multiple Deaths	

Clear Decision Maker / Decision Criteria



- Although, this seems to be a no brainer – a clear decision maker is critical for a focused fast track project;
- Issues on many projects are the result of multiple conflicting motivations and opinions. The inability to make clear and timely decisions inhibits the ability of the team to move forward in the most expeditious manner;
- Thorny issues such as personnel safety, social and environmental issues, competing values, and evaluating the balance of cost / timing / risk to meet the overall objectives of the project ownership team can substantially drag on time and cost, but also can become extreme bottlenecks if not handled effectively;
- Developing a decision criteria that provides a framework for decision making can expedite and simplify the process, and reduce risk.

Key Takeaways

- Fast Tracking is inherently more risky than conventional project execution approaches and is not appropriate for all projects;
- Fast Tracking will NOT give you an optimal solution and will not maximize the value of the project – is this ok with your shareholders, stakeholders, and financiers?
- The key early strategies including social/location/market/funding/delivery/team are best practice in any project and can align and streamline project execution and are critical to any Fast Track success;
- Pay special upfront attention to the “nature driven” aspects of the project as you can’t do anything about them and they are fundamental and form the foundation on which the rest of the fast tracking activities are built;
- Work key aspects of the project in parallel, recognizing that it creates risks that can be mitigated by timely independent reviews and frequent cross functional meetings. Additional costs may also be required;
- Manage the work flow with a good project schedule, technical economic model, and risk register.
- Establish a set of decision criteria that can guide the key decision maker and team to focus their work and move the project forward on an expedited basis.

Questions?

