



**SNC • LAVALIN**

**ATKINS**

Member of the SNC-Lavalin Group

## Funding Capital Projects

Communicating to Support Decision-Making



## The Challenge

Communicating technical data, information, and specifications to support decision-making involves understanding of project economics and finance.



# What is the “Project”

The “Project” means different things to different stakeholders – each tied to exit strategy

**Owner**  
ROI

**Regulator**  
Compliance

**Engineer**  
Design

**Lender**  
Debt Service

**Contractor**  
Warranty

**Operator**  
Cash Flow

**Users**  
Availability

**Community**  
Legacy



# The Project must establish confidence across multiple dimensions

## Revenue Forecasts

Derived from Market Studies

## Capital Expenditures

Captured from engineering drawings and specifications

## Operating Costs

Based on planned operating mode, labor contracts, and consumables

## Maintenance Expense

Planned wear and tear, captured as annual cost for equipment and infrastructure

## Asset Recapitalization

Based on planned replacement timeframes and forecasted costs

**Can you believe  
everything you  
hear?**



# Free Cash Flow Analysis provides the necessary insights

Analysis Free Cash Flow from Operations forms the basis of a project's financial feasibility

Represents the net cash available for distribution to investors and stakeholders

Primary indicator of potential enterprise value and measure of attractiveness for an investment opportunity

A meaningful analysis of FCF requires three perspectives:

- › Detailed build-up of all foreseeable enterprise costs (capital & operating)
- › A perspective on revenue potential that best fits the context of the addressable market.
- › Understanding of the required rates of return (from the investor community) that would enable labeling a project as being “feasible”.



# The “Sniff Test” can typically be measured by 3 key metrics

## Net Present Value

A good tool for determining a project’s viability when compared to other options

## Internal Rate of Return

A tool to measure the investment potential amongst all other investment options and risks

## Payback Period

The tool to determine when an investor can seek an exit opportunity

## There are other metrics as well...

Return on Equity

Return on Capital Employed

Debt to Equity



# Oftentimes, the project must be segmented among stakeholders

A project may involve both identifiable revenue and non-identifiable revenue sources

A project may require assets that support more than one project

A project may require assets that will span beyond the timeframe of the initial investor

A project's assets may involve multiple business lines

A project's assets may require public involvement

## Done well, risks are allocated to parties best able to handle them



## Return on Investment Analysis

3



# The engineer has greatest opportunity to contribute value

Upfront engineering costs are considered “at risk” but are small in comparison to the project

Elements of the project must match demand in terms of revenue potential

Capital costs must be right-sized to consistently delivery return on investment

The application of technology must deliver cost benefits

Deferred costs can mitigate negative influences on project value

Matching capital costs to planned exit strategies is the key



# The engineer's estimate is a key input, but oftentimes fails

Oftentimes, a cost estimate is developed very early in the process

Typically, the numbers are not updated frequently as design progresses

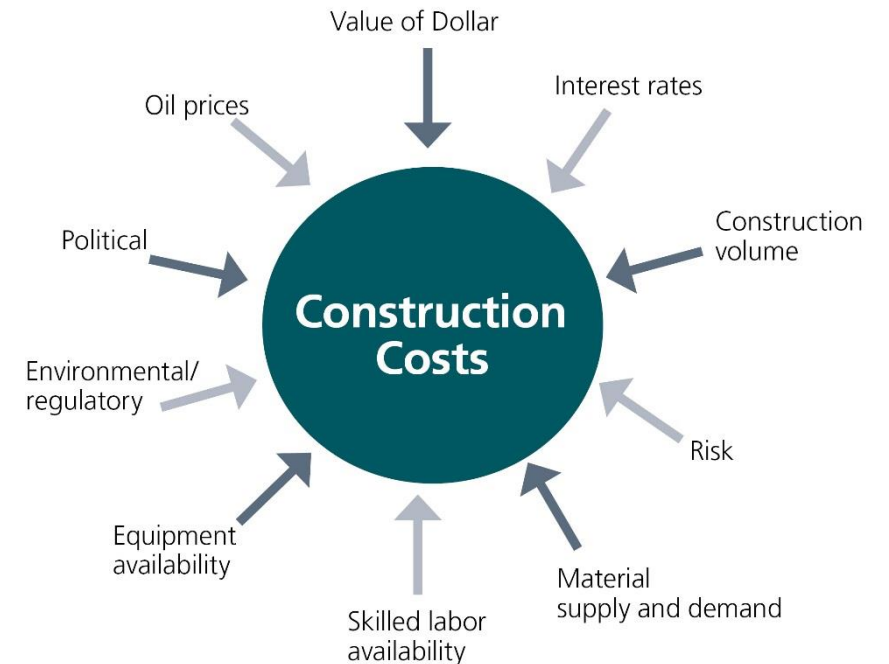
Communication of major changes in costs tend to come late

Decision-makers are surprised

Project economics degrade

Support fades

## Variables influencing construction costs



# A process to improve cost estimates involves continuous update

## Cost and schedule control process

- Schematic estimate
- Validate scope/phasing
- Inclusions and exclusions
- Historical information
- Quantities from CAD/BIM
- Estimate development
- Detailed estimate
- Price major items with vendors
- Reconcile estimate
- Value engineering
- Updated quantities from CAD/BIM
- Itemized estimate
- Value analysis
- Reconcile estimate
- Market conditions
- Negotiations support (CMAR)
- Updated quantities from CAD/BIM
- Bid analysis
- Schedule of values review
- Baseline schedule review
- Cost control
- Pay requests review
- Document controls



- Identify complexities
- Establish contingencies
- Escalation to mid-point
- Total project costs
- Contracting method (D-B-B, D-B, CMAR)
- Validate project budget
- Coordination with technical disciplines
- Risk analysis
- Agencies coordination
- LEED cost evaluation
- Alternatives analysis
- Document coordination
- Constructability review
- Estimate reviews
- Bidding strategies
- Construction schedule
- Construction contingency
- Evaluation of entitlement for changes
- Schedule reviews
- Project closeout
- Claims avoidance
- Claims analysis
- Legal support services

# Summary

A Project means many things to various stakeholders

A common language is based in economics and finance

The key metrics for a successful project requires evaluation of all project variables

The engineer has the potential add significant value to a project's success

Confidence in all numbers is required

The key output of an engineer's work, the cost estimate, is the most important deliverable

