Book Summary

industrial mega projects
Before we continue, we can highly recommend that every Board member, Executive team member and project director read this book, before embarking on investing a significant amount of someone else’s or their own money in a mining project. Every project is a "MegaProject" for the company involved, and the lessons are applicable no matter how large or small the capital employed.

Ed Merrow starts his book summarising it abruptly with “Why megaprojects fail so often”. He notes that in his research for Independent Project Analysis Inc [IPA] that there are seven pitfalls that ultimately lead to mega-projects failing. Namely:

1. “I want to keep it all” – unfairness in distributing the spoils of projects tends to backfire
2. “I want it NOW!” As corners get cut and time pressure mounts, so too is the trajectory of the project doomed to failure. This is the single factor most responsible for project failure
3. “Don’t worry; we’ll work out the details later” The deal drives the project and not the other way around. If the details of the deal are not hammered out then there are no parameters and priorities for the project
4. “Why are we spending so much up front?” Megaprojects can be less well defined than smaller less important projects. We routinely skimp on the front end.
5. “We need to shave 20% off that number” Scope follows functionality and determines cost. Removing cost means removing functionality and eventually diminishing performance.
6. “The contractor should carry the risk; they’re doing the project” A blind belief that a fixed price contract will solve all risks and issues. These contractors don’t have the balance sheet to support this risk.
7. “Fire those #$@!* project managers who overrun our projects” Rarely do PMs look to screw up a project. If they are not trusted to run the project, and explain, share and explain the risks, they will find another project.

Success and Failure are binary

Unlike most smaller projects, megaprojects tend to be either spectacularly successful or doomed to be utter failures. There are very few that are “just mediocre”. In fact Ed Merrow's database contains 350 megaprojects, projects worth more than $1b, drawn from oil and gas [41%], petroleum processing [21%] resource projects [15%], all of which were intended to make an economic profit. These are pulled from a global pool of projects covering every continent, with China being under represented.
Book Summary

He uses the following criteria to assess the success or not of a project – see fig 3.1 extracted from the book.

<table>
<thead>
<tr>
<th>Type of outcome</th>
<th>Thresholds for failure</th>
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<tbody>
<tr>
<td>Cost overruns</td>
<td>&gt; 25%</td>
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<tr>
<td>Cost Competitiveness</td>
<td>&gt; 25%</td>
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<tr>
<td>Slip in execution Schedule</td>
<td>&gt; 25%</td>
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<tr>
<td>Schedule Competitiveness</td>
<td>&gt; 50%</td>
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<tr>
<td>Production v plan</td>
<td>Significantly reduced production in year 2</td>
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A failure was deemed to be a project that exceeded any one of the thresholds for failure outlined above. Thus success was defined by a lack of failure.

Here is what the database looks like in terms of success and failure:

**Figure 3.1** Contrasting Successful and Failed Projects

How to prevent failure?

The key element is the shaping of the project economics early in the pre-project planning. For miners this begins at the Scoping Study, continues through the Pre-feasibility study and feeds into the Feasibility study.

So why consider doing an Enterprise Optimisation in the early phases of a project?
• It institutionalises economic shaping in the heart of the project by creating a specific measurable strategy for gaining comparative advantage from the development of the specific asset.
• It represents the business owners voice in the project team chasing value opportunities as the project economics are shaped.
• It builds bridges across the technical v business divide in the project team.
• It provides continuity in the phases of a project – as people, contractors, etc come and go during the development and commissioning of the project – and eventually forms the back bone of the strategic mine plan for the life of the mine. Lack of continuity is one aspect of a project that is significantly correlated to project failure.
• It synthesises input from all parties, technical, operational, expert, financial.
• It runs scenarios – many of which will be needed to test the economics of various proposed solutions, quickly and efficiently.
• It embraces complexity, and leverages the individual characteristics of the project that will generate substantial value.

Whittle Consulting is the global leader in strategic planning for mining and mineral processing businesses using its proprietary process called Enterprise Optimisation.

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<thead>
<tr>
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