

Delivery of Major Capital Projects:

The Good. The Bad.

...and, The Very Very Ugly!

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...and a bit about **Mining & Metals**

- World HQ for M&M: Brisbane
- > 400 major M&M projects completed on 7 continents
 - 42 major copper projects
 - 26 aluminium smelters
 - 200 mtpa of installed iron ore production
 - 36 major coal projects
- Ports, export facilities, slurry-concentrate pipelines
- Gold, nickel, zinc, cement, uranium, glass, diamonds, TiO₂
- Over 1300 major studies
- Lunar mining & ocean manganese mining (PPPP...FS)

Major Projects:

Lessons learned for Owners over 113
years as their Contractor...

and learned...

and learned...

and...

1. Ready, aim, fire

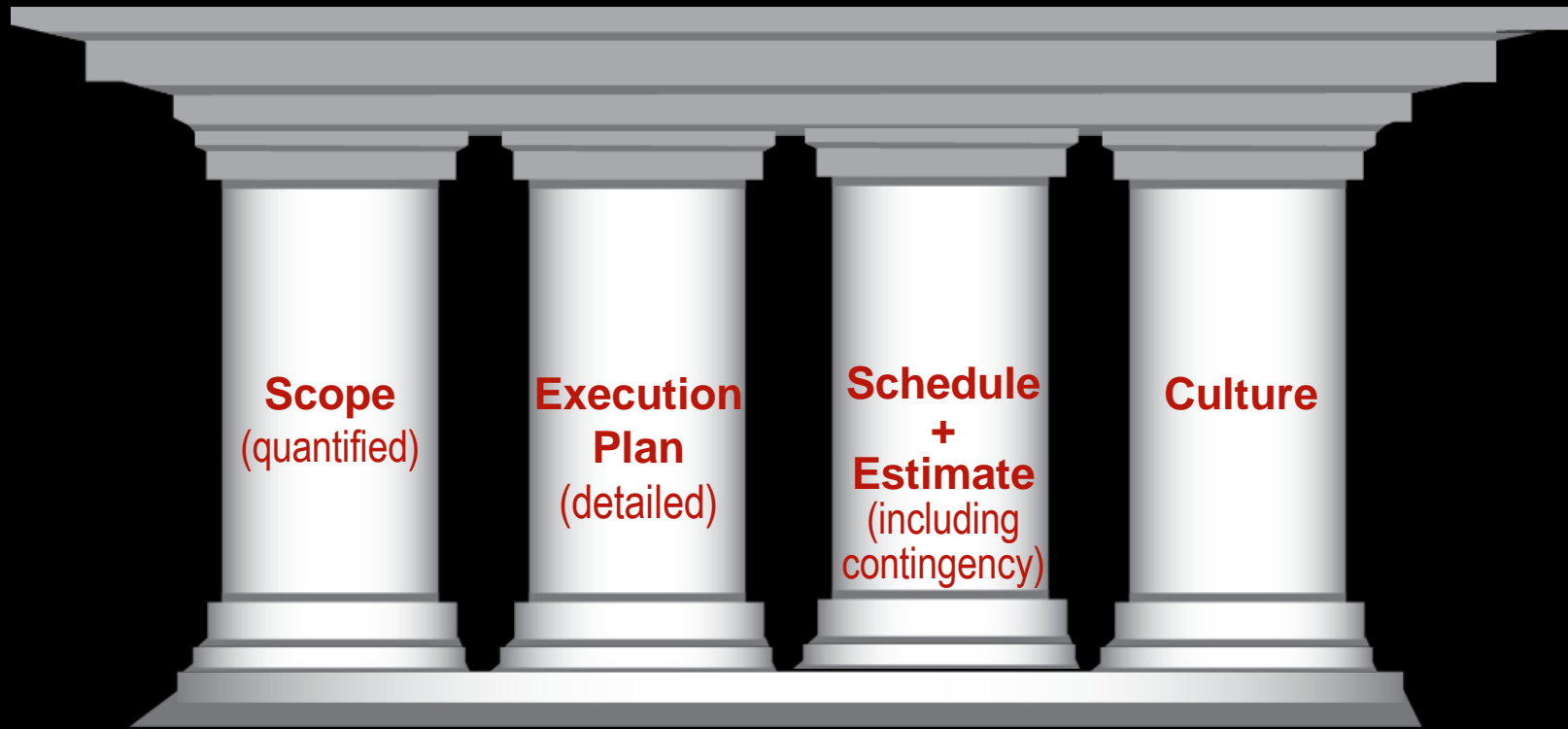
- Natural/inviolable order to great projects!
 - Business case
 - Option analysis
 - Definition + “Lock-down”
 - Go!
 - Stay on course!
- Back-end AFTER front-end
- *Beware: “fast-track,” “schedule-driven,” “concurrent EPC”*

2. Decide what you want!

- Process
- Size
- Location
- Expandability
- Operability/maintainability

**...*before* you start any
detailed design**

3. Set “four pillars” before project launch/approval



Set with the people accountable for execution

4. 80% of outcome is determined in the first 20% of the project

- Four pillars (firmly set)
- Requisite team
- Clear, consistent objectives
- Culture, Culture, Culture...
- “Knock-on” effects of changes!!

5. Project contingency

- Most misused/abused concept in project development
- Is for *expected unknowns*
- Most will likely be spent
- Should be transparent & jointly managed by owner & contractor
- Is NOT for:
 - scope additions
 - schedule changes
 - force majeure events
 - premature release

6. Contract and Contractor

- Consolidate scope (physical and functional) AMAP
- Allocate risk and rewards sensibly: reasonable, balanced
- Motivate success
- Select early, for the duration (absent failure to perform), and based on *evaluated* (not just bid) contribution to project NPV
 - demonstrated values
 - demonstrated capability and capacity
 - price

7. Project culture

- The key to project success
- Led by owner executive & team
- Usually defeated by contracted “gun-for-hire”
- Must embrace mutual dependency for success, transparency, objectivity, respect
- Organic, dynamic...must nourish
- “Learning organisation”: support the crafts!

So...

...to The Good.

The Bad.

**And The
(Very) Ugly!**



The Good

- Well defined + robust objectives, plan, culture (4 pillars)
- Strong, mutually dependant teams w/ evident mutual respect & strong project culture, well nourished
- Good, timely decision-making with well-embedded “swim lanes”
- War on changes!
- Traction + momentum!
- Very strong ES+H performance against zero harm goal
- Quality outstanding
- Milestones well understood, embraced, met
- **All** stakeholders engaged
- Periodic, “zippered” health-checks by execs

The Bad

- Pillars don't fit together and at best wobbly
- Plans unduly aggressive (“to meet hurdle”)
- Small contract packages, many seams
- Contractor selected late w/ low rates + high risk Xfer
- Contingency running low early
- Contractor under-manned/equipped
- Crossing swim lanes if any
- Change not discouraged
- Bad news “managed”

The Very, Very, Ugly!

- Plan: 3 months < best ever on planet (“to meet hurdle”)
- “You’ll bring us another rock, then we’ll decide”
- Basic design changes during detailed design/construction
- Owner team (poorly) led by “gun-for-hire”
- Contractor directed not to use trend program
- Contingency spent by 50% construction complete
- “Mushroom treatment” of bad news
- Teams mainly throwing rocks at each other
- Safety abysmal, progress milestones a joke
- Labour revolts
- Hostile local community
- Contractor “walks” &/or becomes insolvent

Questions?



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