In search of some mining excellence

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Background

- Geology is about the proverbial gold, not just the Au.
- Leads to Economics of Mining, as studied at McGill and UBC
- (Project) economics are determined in part by environment
- Environments have to be managed
- Anyone teaching management knows organisations
- Once you know ***of*** a subject you are at risk of being asked to teach it
- The background a smattering of geology, engineering, economics, psychology and sociology
- Mining & metals? An excuse is needed and this is CSR

An excellent trick

- A bias for action, facilitate quick decision making & problem solving tends to avoid bureaucratic control
- Close to the customer - learning from those served
- Autonomy and entrepreneurship - fostering innovation
- Productivity through people – treating employees as a source of quality.
- Hands-on, value-driven - management philosophy - management showing its commitment.
- Stay with the business that you know.
- Simple form, lean staff - best companies have minimal HQ staff.
- Simultaneous loose-tight properties - autonomy in shop-floor activities plus centralized values.

Corporate Responsibility
- in mining and elsewhere

- Much hype, less action
- BIG risks of loss – or possibly risk of BIG loss
  - Mount Polley
  - Rio Tinto in Quebec
  - Pascua Llama
- Unclear nature of gains
  - Image (but what is the ”image to cash” convertion ratio?)
  - Weighted Average Cost of Capital – debt no, equity yes
- Variable probabilities

The BIG problem is data

- We don’t know much about how firms deal with CSR nor do we know what effects this may have upon results
- The data available are
  - Industry cross sections
  - Static
  - Filtered and based on ratings
  - Stated preferences (what they say they do)
- The ”business case” seems generally weak
- Maybe it is more about ”visibility” to stakeholders

Contingent C(S)R

- The contingency idea: companies react to outside and inside events and trends

- When do companies undertake CR activities?
- How do companies undertake CR activities?
- Why do companies undertake CR specific CR activities?

When and Why CR, in theory?

- Institutional level pressures
  - Activists
  - Economic conditions
  - Stakeholders
- Corporate level pressures
  - Instrumental, good for business, maybe
  - Normative, the ”right” thing to do
  - Owner’s decision

How is CR done?

- What practices are used?
- What specific outcomes are expected ?
- At what cost?
- Side effects hindering or furthering outcomes?

Data on CR in Mining

- Annual reports – paint very nice pictures, even if they follow GRI and/or Global Compact guidelines
- This and any other disclosure by operators can be manipulated
- Examples:
  - Kinross discloses normalised output variables at mine level and benchmarks against top-10 gold miners
  - FQML publishes a 80+ page report with nice (green) pictures, comparisons not possible
- It is very possible to study CR reporting
  - But they seem to be shifting formats all the time.

Data from Technical Reports

- 43-101 is filled with drill data, geostats and calculations
- Documents that a ressource, reserve, something is there, probably.
- The deposit is also shown to be mineable at a profit.
- There are also a bit of data on other matters, such as environment and social impacts
- These latter are highly variable in terms of volume and depth of coverage

What matters, or when, how and why?

- Are there ex-ante factors influencing CR choices?
- Prior corporate experience
- Project history
  - Think about the most hotly contested mine around….
- Location, location, location
- Directions or selections
  - Are specific interventions chosen to satisfy demands, whatever their urgency, legitimacy and power?

Responsibility no. 1: Profit

- Profit=Revenues-costs
- In mining revenues are hard to work with and most commodity markets are quite competitive.
- We are basically all here to work on the other problem….cost or unit cost
- But cost depends on decisions and behaviours
- The challenge is to find information that can help us get a better picture of how this relationship plays out in any given organisation
- The interesting question is whether technical reports can provide this information

The excellence idea

- None of the 43 firms studied by Peters and Waterman for their 'In Search of Excellence' book are excellent any more. Most have ceased to exist or have become mere shadows of themselves.
- So, their approach did not work well
- We could study survival and growth and there are in fact good data around on all the mining and exploration firmas that have existed – at least if measured in terms of births and deaths.
- But the task is extremely enormous

Want to know?

- Why might we want to know which mining firms are god, less good, bad or even remarkably incompetent

- Investment?
- Employment?
- Trading?
- Strategy?
- Benefits of COSMO and similar methods?

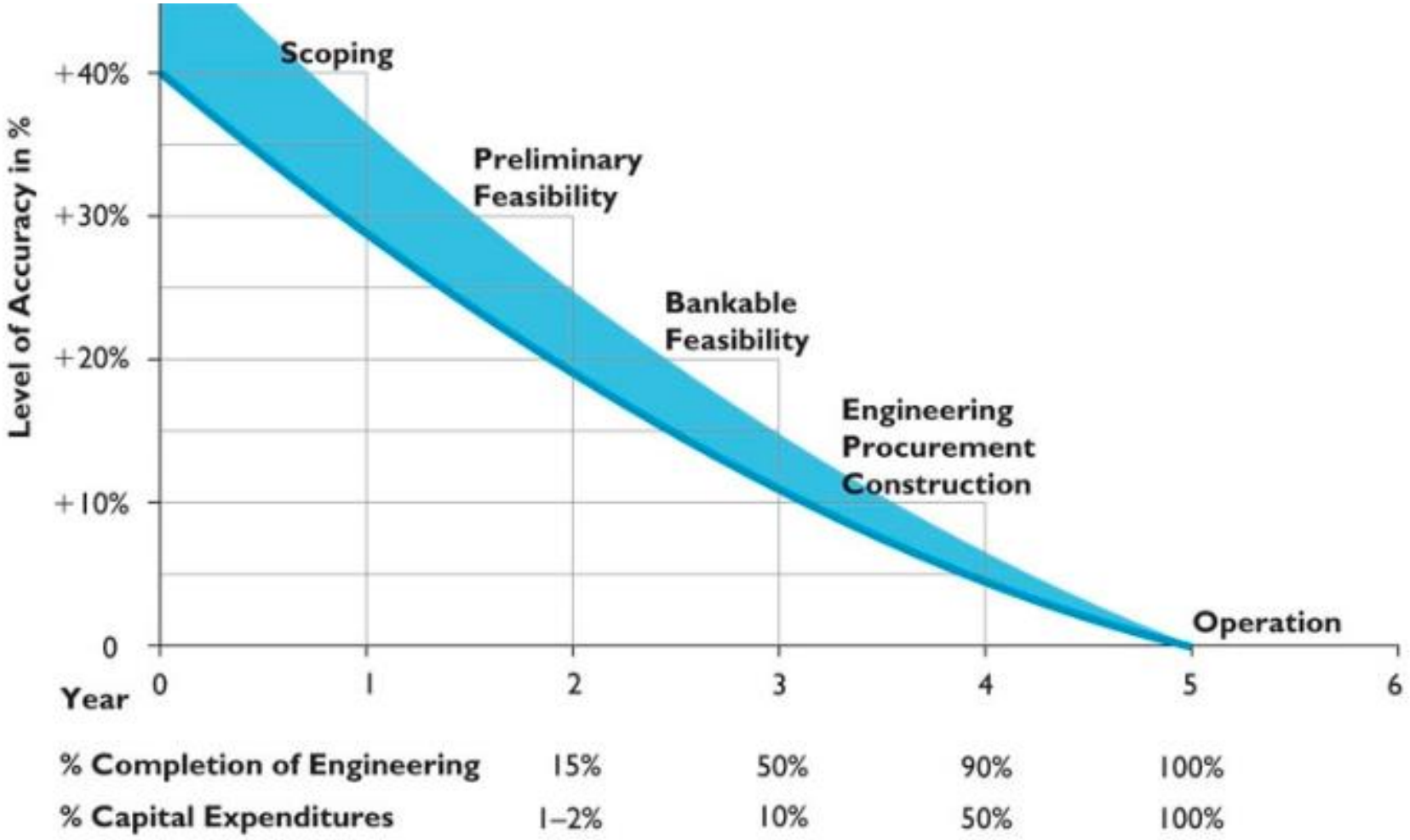
We want data

- On resources (those not in the ground)
  - Technologies
  - Practices
- On financial performance
- On culture
- On managment
- But much of this is hidden from sight

TR in 43-101

- The starting point was CR
  - There is clearly significant variation in the way reports deal with issues related to CR – environment, social, community
  - Variation between firms involved, locations, consultants etc.
- The volume of reports and documents – is staggering
  - To get any serious research done a sample is necessary
  - Big or bigish projects
  - Dispersed
  - Broad selection of companies – juniors and seniors

The clean version



Where this might go

- CR project will be based upon
  - A sample of projects with 43-101 Technial Reports
  - Selected by size (estimated values)
  - Selected to give wide geographical coverage
  - Selected to include all major mining firms that have 43-101 TRs
  - Possible focus on new deposits since 2000 or 2005
- Spinnoff coding of reserve & planning info
  - What methods are used
  - Are there any patterns in the choice of methods?

Data collection

Project file

Base data: Location, reserves, timeline

CR data: Baseline, Impacts, Stakeholders, Remediation for environment and social dimensions.

Mine data: Reserve estimation methods, Mine planning methods

Other Risk: Political, markets

Owner/operator prior exposure

Project X

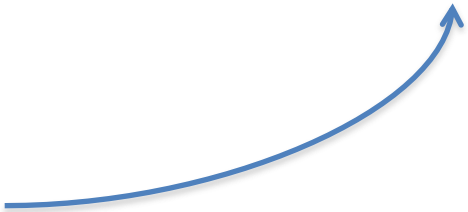
Technical reports

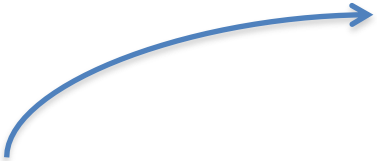
Owner/Operator

Financial position

Assets book value

Market value





Financial databases

SNL, Compustat

What to expect?

- CR work in mining is probably not consistent but adapts to the context or contingencies
- Technology in the sense of optimisation and reserve estimation and simulation may confer an advantage – and make ”advanced” firms more profitable
- Unless the effects of grade and tonnage obscures the picture – ”we are very profitable, we don’t need to think too much”