


Knight Piésold
CONSULTING

An Engineering Service Providers View of the Slow Down in Gold Mining

Denver Gold Group Luncheon

January 21, 2014

The First Message

Go Broncos

Safety Share – The Most Important Message

Don't step off the curb without looking

Be careful when you reach onto the carousel to get your suitcase

Overview

- Lessons Learned from the Recent Bull Cycle
- The New Challenge
- Thoughts from Mining EPCC Service Providers
- What Knight Piesold is Doing

Lessons learned From the Recent Bull Cycle

1. The rapid demand for EPCC services …

… led to a huge demand for personnel and …

… to inflated salary expectations and inexperienced teams

Resulted in some **<u>inefficient and impractical solutions</u>** that …

… led to higher capital and operating costs for projects.

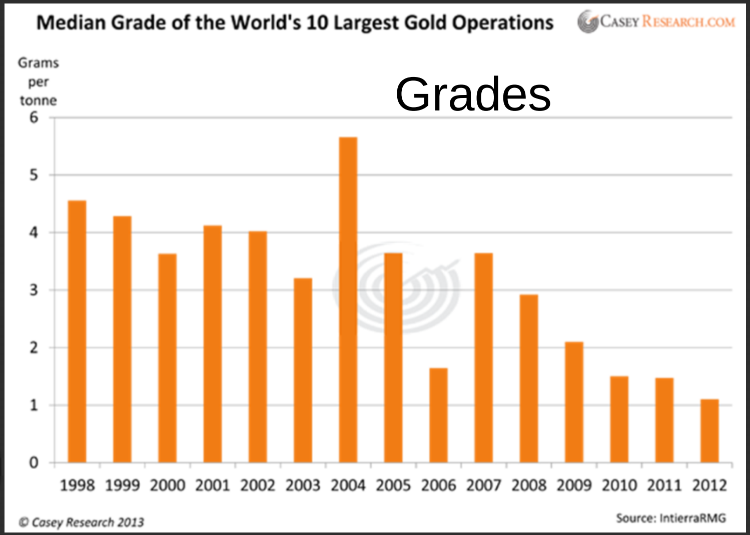
2. The time value of money went through the roof and **<u>unrealistically tight schedules that weren't met</u>** often became the norm and were more important than other considerations …

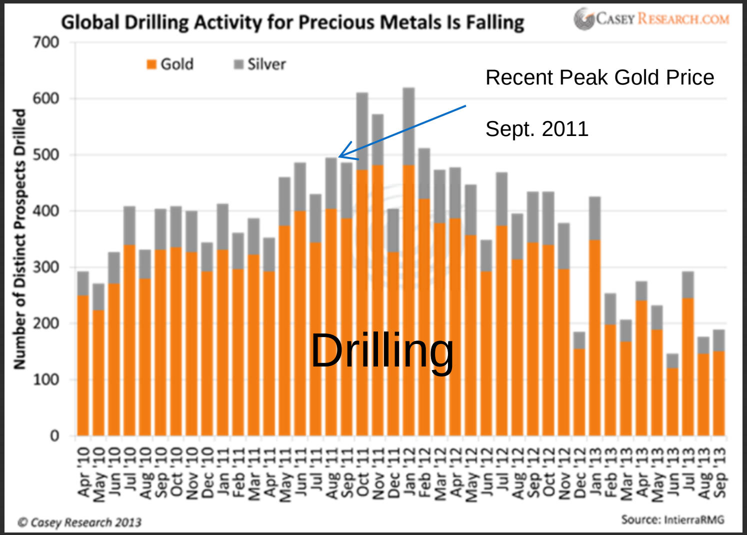
… leading to some disastrous results.

Now We're in a Slow Down with a New Challenge

How to meet future demand when grades are declining and successful large discoveries are becoming scarce?

And when margins are falling?





<u>From the mining industry side ???</u>

<u>From the EPCC side make sure value is being added.</u>

What Is The Thinking?

Has the slowdown affected your business and how are you responding?

- Yes, competition is up and the volume of work is down. We are making every effort to keep our key staff utilized.
- Yes, the slowdown has forced us to sharpen our game.
- Yes, noticeably towards the end of 2013 when we saw clients hesitant to pull the trigger on capital projects.
- Yes. Australia saw the largest reduction. Brazil has been difficult – when Vale slows down, everyone slows down. Western Canada maintained a solid work load, eastern Canada was slower.
- Not yet, we have a few large anchor projects continuing. But ?
- Not yet, but we expect a significant slowing in 2014.

Affects are being felt or are expected to be felt soon but little response yet – aside from some downsizing (next slide) it seems like everyone is waiting

Have you had to downsize staff? How much (little, modest or large amount)?

- No, mostly we are reallocating staff to other projects and are redeploying skill sets in other sectors.
- Yes, we have downsized some; the slowdown has forced us to look closely at marginal performing individuals.
- Yes, slightly
- Yes, significantly
- Yes, slightly, but some was to remove underperformers.
- Yes, we downsized in all regions - Australia was large, Brazil large, other regions were modest.

Some downsizing – not yet excessive (except large EPCC's in Australia and South America that have downsized significantly)

Do you have any thoughts on the likely duration of the slowdown? If so, what, and why (1 of 2)?

- I expect the slowdown to start easing in 2014 due to the pressure to replace ounces.
- All of the projections seem to call for price volatility over the next two years after which we hope to see price stabilization and then an up-tick. We are bullish on China (it's too big to fail) and cautious about the developed economies where we may see multiple years of slow growth.
- 1-2 years - this is a corrective measure to cool what was a superheated industry and reduce the costs of bringing new projects on line and weed out the poor projects from the good ones at the demand of investors.
- We don't see a compelling reason for an upturn barring an unforeseen economic or geopolitical "crisis".
- Gold production is up to compensate for reducing prices so the short term supply/demand balance is not in favor of a price increase soon – say 2 years minimum.

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Do you have any thoughts on the likely duration of the slowdown? If so, what, and why (2 of 2)?

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- We are getting many requests for proposals again, so I expect that we will see growth starting mid this year.

General uncertainty on duration but a 2 year (ish) window seems to be the common theme. However, with gold, supply and demand aren't the only factors. The current price drop appears to be associated with:

- High volume sales – eg: 4600 tonnes in 2 days last April (>1.5 x the total annual gold production) – undermined market confidence

- Improvement in the US economy and strengthening of the USD

Do you see this as any different to previous downturns (1 of 3)?

- Yes, the majors are far more extended than during previous cycles and were caught up in uncontrolled growth leading to poor project or acquisition decisions.
- Yes, despite high metals prices, stock prices remained low resulting in expensive acquisitions.
- Yes, low stock prices resulted in juniors being unable to finance the advancement of their projects thus the next generation of projects are not moving along.
- Yes, this slow down is driven by the investment community wanting a better return on its investments (low stock prices) while earlier ones in 1981/1982 and 2002/2004 were driven by low metals prices due to market forces.
- Yes, metals prices are still quite high, which means that the current belt tightening should allow for robust margins to be re-established.

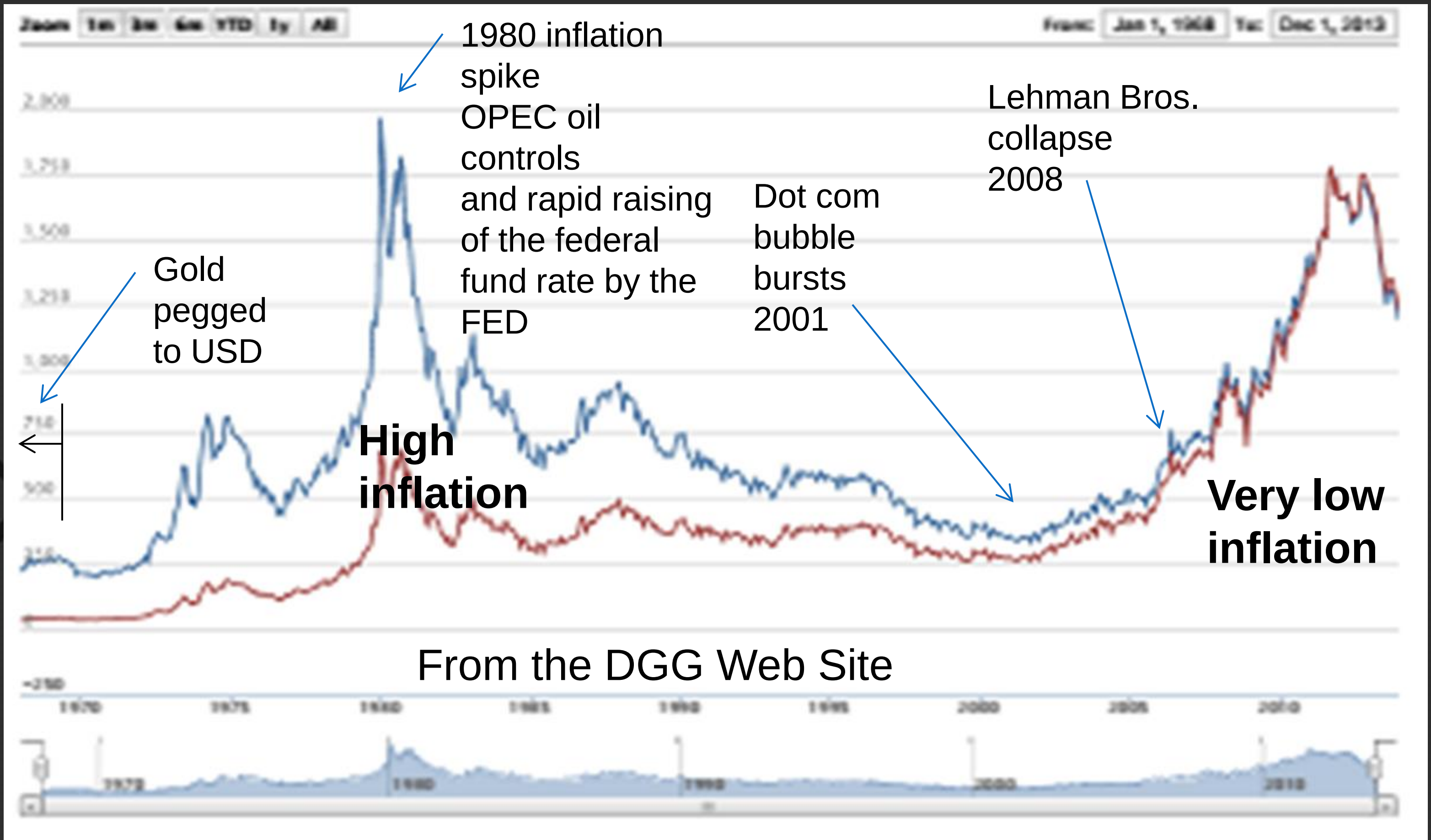
Do you see this as any different to previous downturns (2 of 3)?

- Yes, we appear to be transitioning from an economic system that was dominated by the US, Europe and other developed economies to a ‘one-player’ system where the global economy rests on the economic well-being and spending of one player: China.
- Yes, at least in Peru (and other countries in South America), the social side is having an effect on the slowdown; some projects in Peru have been delayed or postponed due to social conflicts, which was not the case before.
- Hmmm, yes, I’m not sure we’ve experienced anything like this in the past three decades. We experienced an almost unreal rise in Au since 2005.
- Yes, this will be more severe because the bull cycle was more rapid and reached a higher and more unsustained level than before.
- No, this downturn (like others) represents a crisis of confidence in the industry.

Do you see this as any different to previous downturns (3 of 3)?

Its agreed this is different but many reasons given

There is no doubt that this last bull cycle was “near” unprecedented in terms of gold price – and this time <u>low inflation</u>



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Are you providing any different services or types of services since the downturn?

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- No
- Yes, we have added a due diligence service to assist clients as they acquire and divest mine properties and we are evaluating which of our services will help optimize our clients' businesses .
- No, our approach is to focus on what we do best and do it really well so we are not looking to diversify into the next "hot" niche.
- Yes, we are putting a larger focus on assisting operating mines to become more efficient.
- No, we are waiting this out. We are seeing some mines cut consulting in favor of developing in-house staff, but we have seen this cycle before and expect that these mines will realize that consultants are more efficient in the long term and will reduce their staff in a year or so.

We are seeing the opposite – mines cutting in-house staff – we think this will be an opportunity

What do you think consultants can/should do to assist gold companies in recovering margins (1 of 2)?

- Get back to the basics - KISS principle (Keep It Simple Stupid). Use dedicated suitably qualified people with a proven record of delivering high quality cost effective solutions and don't obsess about new untried technologies and innovation at all costs - use proven approaches and enhance them with innovation

- Help mining companies optimize their operations so that they become efficient.

- On projects, help identify all components of cost including reputational costs (environmental and social) to allow good projects to be developed quicker and realize more overall value.

- The big "one-stop" engineering companies should re-assess their "all things to all clients" approach that has created unnecessary costs. Let the specialists do their thing.

What do you think consultants can/should do to assist gold companies in recovering margins (2 of 2)?

- Small, specialist companies are not an excessive part of the cost structure and while they need to be cost efficient their principal focus should be on adding value (through smart design or operating assistance) to projects.
- Very large EPCC companies are a significant part of the cost structure and in addition to focusing on adding value to projects they should look internally to eliminate unneeded bureaucracy and flush out cost reductions.
- Consultants should tighten their belts but with much care given. The problem is when revenues are reduced in response to a slow industry, hanging onto valuable staff that own your institutional knowledge is very tough. These are the staff that the mining companies will rely upon as the next rebound begins.

Focus on adding value (which is not necessarily cheaper service). Look for smart, innovative ways to do things but only where proven methods don't get the project or operation there. Keep the A teams and the up and coming A teams and have them ready for the next cycle.

What do you think miners can/should do to assist themselves in recovering their margins (1 of 3)?

- Adopt fiscal discipline, better due diligence, more realistic feasibility studies and more attention to social license to operate (SLO). SLO often dictates the timeframe of a project and operational efficiency.

- Do not compete to be the largest company or the company with "that" new asset (better due diligence).

- Don't build empires that result in inefficiency. Try to maintain effectively managed nimble operations.

- Develop better long term planning to replace short term "band aids" that do not address root issues or overall inefficiencies.

- Slow down, get it right, particularly with permitting, and save on costs. Project economics were overshadowed, and then negatively impacted, by overly aggressive and unrealistic schedules.

What do you think miners can/should do to assist themselves in recovering their margins (2 of 3)?

- Improve the overall quality of decision making and make the remuneration of decision makers less tied to short term financial gain and more to longer term successes.

- Empower good people to make well thought out decisions quickly. Key decisions that drag on are costly and lead to inefficient work.

- Adopt fully integrated waste and water management methods that will be secure and cost efficient over the long term. These components are major cost and risk contributors and need to be done right. Avoid the temptation to piece meal these components for short term savings.

- Do not adopt one approach because it worked “over there” as the risks and efficiencies are site specific. For example, some paste tailings concepts have resulted in very high capital/operating costs and huge operational complexities with little or no environmental benefit .

What do you think miners can/should do to assist themselves in recovering their margins (3 of 3)?

- Don't automatically assume that because some large EPCCs have been expensive the entire consulting industry is and force everyone to reduce fees, which may result in a reduction of quality and "value engineering". You get what you pay for.

- When better economic times prevail allow the consultants to renegotiate their rates. Breaking even is not a sustainable model if you want the best minds and most experienced people available working to save you money. Remember, mining is unique in that most of the facilities have the potential of being environmental liabilities if well-seasoned engineering is not applied.

- During the next upswing, moderate the poaching of people from EPCCs because EPCCs cannot respond as quickly as industry with pay packages, partly due to contractual rate schedules with the mines (some of which are multiple year agreements).

Focus on adding value (which is not necessarily cheaper service). Look for smart, innovative ways to do things but only where proven methods don't get the project or operation there. Keep the A teams and the up and coming A teams and have them ready for the next cycle.

Will the mining consulting business look different after the downturn? If so, in what way (1 of 2)?

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- Yes, I suspect that the lack of capital projects will result in a loss of valued staff and consequently a loss of trusted technical resources. Once we lose these folks they typically go to other industries and getting them back is very difficult. That means retraining new staff and the growing pains that go along this.

- Yes, consulting businesses will be more efficient and better run companies or they will not survive. And when there is another boom, the mining industry will have to be smarter about managing itself through it. Consulting companies will mirror mining companies. We are likely to be much more focused, better managed and leaner after the downturn. To some extent consulting companies are already there. It is also likely that there will be a shortage of senior talent with experience as has been the case following downturns in the past.

- No, for a while as the strong and innovative consultants will survive and perhaps prosper relative to the others, but with an industry rebound mining is likely to resemble its prior form.

Will the mining consulting business look different after the downturn? If so, in what way (2 of 2)?

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- No, I don´t see a big change; it´s a slowdown that will be temporary and not create lasting changes.

- Not significantly. It's supply and demand. The larger firms "growth initiatives" will gravitate to the next hot industry with less and less enthusiasm for mining. The smaller to mid-size firms will likely focus more intently on quality and efficiencies. We are seeing our clients looking to build teams of consultants rather than one-stop shopping. One significant difference may be a sustained suppression of new projects, which could really impact permitting and ESIA consulting companies.

- No, there will continue to be a shortage of experienced people because this is a business that is not for the "faint of heart" and many young people do not want to live in the remote areas.

Both yes's and no's but it appears that this is driven by the time frame considered. Yes's apply to the short term and No's to the long term. Challenges to keep the good people and the up and down swings are expected to continue.

Are there ways to reduce the severity and frequency of future downturns? If so, how (1 of 2)?

- Consultants have modest influence on this but can protect themselves by diversification.
- Consultant can help mining companies by providing “honest” assessments of cost and risk not just answers that want to be heard. Hard to do when the pressure is on for a favored answer.
- Mining companies can protect themselves by hearing these “honest” answers and not forcing unrealistic ones.
- Invest in projects that make financial and risk based sense to avoid the conditions for another super heated cycle with investor expectations that cannot be met.
- Better planning and execution. There were so many projects on the table with unrealistic schedules and cost expectations being completed by an under-resourced industry, that inefficiencies, higher costs, limited quality and ultimately a lack of success became common.

Are there ways to reduce the severity and frequency of future downturns? If so, how (2 of 2)?

- No clue on the macro scale. On the micro scale I follow the advice of my grandfather who told me, “if you want to get rich quick…do it slowly”.

The last comment is my favorite

What determines a great project that should be developed at any time from one that should not be (1 of 2)?

- A great project considers economics, social, political and sustainability factors, is financially robust and its success is not dependent on the peak price in the cycle. It also provides a defined benefit to the community that is not otherwise available. When you have a project with both strong numbers and provides a benefit to the community, you have a great project.

- A great project is one that provides value to company shareholders but also to the local and regional communities without undue risk to the environment and reputational risk to the overall mining industry.

- A great project puts the appropriate focus on extraneous considerations (geopolitics, social acceptance, land ownership, and water) as well as just the gross economics of the ore body, and taking for granted the rest.

What determines a great project that should be developed at any time from one that should not be (1 of 2)?

- A great project is one that is prepared or developed with a great managerial team, great engineering, great project management procedures (which include management of stakeholders, risks, etc.).

- Grade is king. If the project does not meet the financial objectives the first time around then park it and move on, don’t keep studying it unless something fundamentally changes or the study is bad.

There were many blank responses or statements of I don’t know. Those that provided an answer defined a great project as much more than just financially sound.

What Knight Piesold is Doing (1 of 2)

Commodity markets have a long history of corrections that are a healthy part of capitalism.

Our intent is to largely “stay the course”.

Our fundamental behavior is to be as similar as possible in good times and bad.

Clearly we have to be aware of and respond to short-term realities (cost adjustments) but keep core people.

Our overriding principle is to do good work and help our clients make sound, informed decisions

To do this   Listen, Listen, Listen!

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What Knight Piesold is Doing (2 of 2)

Focus hard on value added services that save $$$ without adding significant risk.

Be exhaustive in searching for these opportunities.

But, keep it simple. Adding complexity adds cost and risk.

Finally, our view is that reducing engineering costs won't add much value because the cost of good engineering is low but the cost of poor engineering is high. Work hard but for a fair return.

Thank You