

Interview with Peter Bryant President, TransTech USA



TransTech USA is a corporate advisory firm that specializes in the formulation and execution of corporate and innovation strategy. Peter has advised companies primarily in the resources, energy & technology sectors, including Rio Tinto, BHP, Ricoh, Peabody Energy and Barrick Gold.

Peter is a Senior Fellow at the Kellogg Innovation Network, which is affiliated with the Kellogg School of Management. Peter is also a Fellow of the Australian Institute of Company Directors and a senior member of the NZ Institute of Chartered Accountants. He has been a speaker at Innovation, Venture Capital and industry conferences.

Peter is a Senior Advisor to the boutique investment bank Q Advisors and sits on the Boards of several organizations, including iTechne, Spatial Energy, Our Team Base, T-UP and Friends of Victoria University. Peter can be reached at peterbryant@transtechusa.com

Interview conducted by Doug Berger, INNOVATE LLC. doug@innovate1st.com

Doug: Let's focus today's conversation on the challenges that are facing natural resource and mining companies in particular.

Peter: The primary challenge and opportunity facing the natural resource industry is unprecedented demand, primarily driven by the growth of economies in China and India. Latin America, Africa and the Middle East will also be coming down the pipe as consumers. Many of these raw material companies need to achieve a quantum increase in their production, for some by 600% over the next 10-12 years. This rarely, if ever, has occurred, in any global expansion.

1. They are facing a massive shortage of people, whose average age is 50 or so, including schooled labor, engineers, geologists and geophysicists.
2. While they are receiving record prices, they are happy to let some costs climb. However, the cost trend line is not attractive to them.
3. Resources have been extracted from friendly or less difficult countries. Mining companies have to find new sources of resources in more and more difficult environments. This presents challenges in risk management. They are also facing geopolitical challenges from national interests and new demands on the socio-economic front.
4. The speed and cost at which mines can be commissioned and decommissioned is a challenge.

Doug: As industries go through times of disruptive change, the common sense thinking of the past no longer holds true for the future. The challenge for executives, both individually and collectively, is to update their thinking.

Peter: It varies from company to company, and country to country, but there are some very old notions and assumptions needing to be turned on their head. Most executives have come through an environment consisting of 30 years of low prices and cost cutting in a non-growth environment. That is the only world they know.

To begin with, there's the notion of the Boom-Bust Cycle. "We are very well prepared for the next downturn," said one of my clients. "Well, what happens if we're in a sustained growth period?" I countered. This puzzled them. This cost-cutting mentality is ingrained in people ... an unwillingness to spend or invest. Risk models, investment models, and the whole propensity to take risks needs to be challenged because there could be another 10-15 years of this growth.

Secondly, mining has been an especially insulated industry. Technology has driven change in many industries, but has not been leveraged into this industry nearly to the extent that it could have been.

Another area is the poor state of the ecosystem. After 30 years of hard negotiation with the companies that surround them, there is very little R&D capability or innovation in the system.

The organizational model that they employ is predominantly hierarchical. People are measured by how many big pieces of equipment or how many people they manage, versus their value contribution.

The last area is their view of their value chain. The resource companies had a very narrow view of their value chain, centering on the operational aspects of their business.

Doug: When companies face the opportunity for unprecedented growth, there are the changes that executives themselves need to make.

Peter: There's really no magic bullet. Intellectually we can all come up with the answers. It's important to break executives and middle management out of their current thinking and develop plausible concepts for the future. Even though the resource industry has asset lives going out 20 years, these executives have a very short-term outlook of only one or two years. We develop with the companies a set of scenarios where they can see the possibilities of the future. When you start to look out 15 years at the different scenarios that could occur in China and India, their economic growth and what it means to them, light bulbs start going off around the table. This provides them with a new set of lenses through which to look into the future, and from there we collaboratively develop the implications for the industry and the company. Then we determine the best and most robust strategic options within the various scenarios, this includes an economic valuation of each option.

Acting on those options for how the business can meet that growth factor is an organizational change exercise, as much as anything. In one case, we showed them with conservative numbers, that unless they were able to significantly innovate across multitudes of areas - from organization, economic development and operating platforms, to increasing production fourfold in the next six years - they would still barely be able to keep their market share. In addition, the existing properties could not provide for all of the growth, so new properties had to be acquired and developed in very short order.

Doug: It is not just a matter of growth by acquisition and consolidation; it is growth that includes accelerating the ability to commercialize new properties.

Peter: You are right about that. This is not about an acquisition and rollup strategy of existing companies. It's about increasing the overall production capacity of every mineral with which we are familiar and across all companies. That creates opportunities for new entrants. Many of these big companies are sitting on the top of the pile, very fearful that if they slip, it will allow new entrants. We are already seeing new companies, who unencumbered by old thinking, are starting to push into the resource sector.

Doug: People think of hunting grounds as finding new markets or new applications. In the mining industry, the term 'hunting grounds' refers to key leverage points for executing growth. One such leverage point, which you mentioned earlier, was the technology being used in other industries. What other leverage points for operational growth have you run across?

Peter: First, I'll expand on technology. There are operating platforms throughout the whole value chain, which have remained unchanged for decades. The mechanical movements are very similar to a person with a pick, a shovel and wheelbarrow. These are very labor intensive. With the people shortage, those methods can no longer sustain the needed growth. New paradigms of operating platforms need to be developed, not only for new properties, but also for existing properties.

Even with all of the properties and reserves that companies have, they need access to new properties. As our current economic development model in Africa and Latin America gets more sophisticated, companies need to come up with a new way of packaging an economic and financial package to secure resources, especially when faced with competition from national interests in China and India. This requires strong innovation around the business model of securing new resources.

Open innovation is a vital leverage point. We think of this process by using a nomenclature of *sense-source-adapt-integrate-adopt (SSAIA)*. We begin to effect culture change in organizations by proactively *sensing and sourcing capability* from other industries. As we go through each phase of SSAIA, companies recognize the different capabilities needed by the company and the people for each phase. E.g., Sensing and sourcing is the finding of those capabilities and technologies, and there you need more of the innovation-crazy kind of people.

There is further innovation around the organizational model. The strict hierarchical model hinders peoples' ability to grow and perform to the level now needed. They weren't really tapping into the innovation that was within their company, and the hierarchy prevented networking external to their organization and cross collaboration from within.

Doug: I would underscore the fact that the mining industry highlights this under utilized opportunity for game-changing execution and organizational models. Their tendency in innovation is mostly externally focused.

Peter: Oh, I agree. And that was one of the challenges five years ago when mining and resource companies were still firmly entrenched in the boom/bust thinking. As you looked around the universe of innovation, all of the discussion, all of the articles, were around product innovation, mainly on a business to consumer basis. There was very little casework that would help get the minds of mining executives connected with innovating. That was an impediment because they said, "Oh, innovation. That has to do with mobile phones, Procter & Gamble, stuff like that." It was very hard for them to relate.

Doug: What are some examples of different operating platforms, developed in other industries, which are now finding their way into the mining industry?

Peter: We've divided this into the classic three time horizons. The first time horizon, from 0-5 years, consists of mostly continuous improvement to existing methods, with limited step change in certain segments of the operation. In horizon two, 5-10 years, we start to replace big chunks of the operating platform with whole new step change methods. Then, horizon three, 10 plus years, is an unrecognizable mine, a totally new operating platform. With this in mind, we can broadly characterize the envisioned future. A mine operation will be more continuous in nature ... with a low energy and a carbon footprint ... easily scaled up or scaled down as production flexed ... with minimal people in the mines themselves. We even developed very futuristic animated videos, to help get this message across to the whole company. This is part of the communication was fundamental to effecting the necessary organizational change.

The concept of remote management or remote operations is vital to this vision ... robotics and automation particularly from manufacturing ... submersible vehicles from O&G and undersea cable laying ... NASA with automation and robotics on the Mars rovers coming up in 2010 ... these are all examples of taking a portfolio of technologies and capabilities, and adapting and integrating these technologies into a new operating platform specific for the industry. Some existed, some were being planned, and some don't yet exist.

Doug: It's exciting to take something that by most accounts has very little room for fundamental disruptive innovation, and, by approaching it with a very different lens, uncover many disruptive opportunities.

Peter: There was a complication, however, because the ecosystem that surrounded mining was retarded in terms of step change R&D and innovation. In Oil & Gas, you have companies like Schlumberger and Halliburton that are real innovation engines. For this ecosystem to happen in the timeframe needed, certain companies had to take leadership positions and couldn't afford to just sit there and wait. This forced executive thinking to move from the fast follower/laggard adoption model, to being the early adopter, being the ones to drive, fund and create organizations or consortiums to provide needed innovation. That is an innovation in itself, and a massive mental shift. It changed their whole investment/risk model, with which they had been comfortable. We are now seeing that happening within this industry as a whole, and all within the space of four or five years, driven by this urgency.

Creating a burning platform of urgency in an industry and within companies that are making record amounts of money is complex. One of the key steps was having management recognize that, while they may be making significant amounts of money today, if you continue in that mode of operation, 'you will be toast' in about five years. Other companies would innovate out of necessity. New companies would form. Vale, a company out of Brazil, is now the second largest mining company on the planet. If I had predicted that five years ago, you would have laughed me out of the room. We had to adopt a lot of innovative approaches to help executives and equally importantly middle management come to that realization, especially since it was middle management who were feeling the pressure of meeting quarterly operational targets.

Doug: In the course of your innovation work, what personal assumptions did you start with and then find yourself overturning in the course of your own journey?

Peter: I went in thinking it would be very easy to have people understand and then work with external companies and create collaboration. That's fundamental to open innovation. I

did not expect the degree of difficulty I encountered in getting that to happen. I encountered difficulty at two levels. One was convincing people that it needed to be done.... that surprised me. The other was putting it into practice ... getting people to sit down and collaborate and see value.

The other was the degree by which old habits/approaches persisted despite the clear evidence that this new environment demanded a new approach. This sometimes resulted in contrary behavior and messages being communicated within the company. Under pressure, people tend to revert to the familiar and the corporate antibodies attack anything new. This complicates the organizational change aspect of any major new strategy and the drive to create a sustainable innovative environment, which tolerates risk taking, new behaviors and new approaches.

Doug: In my consulting to the mining industry, I was surprised in a positive way by the business savvy of the average worker. I was working in some isolated locales and was surprised by just how global and knowledgeable they were about business, cash flow and investment.

Peter: That taps into a huge point. I was pleasantly surprised too, by the stellar capability of the people on the 'coal face'. They were just phenomenal. The disconnect between these people and management surprised me. Management had no insight into the assets of their people, and therefore never fully leveraged their people's abilities and knowledge to the full benefit of the companies.

Doug: My rule of thumb was to ask management, "If you could have total discretion, what gain do you think you would be capable of making through improvement or innovation?" And it never failed that when I went out to the people working at the face, I could double the number management had given me.

Peter: Yes, and it's not just physical numbers. It's the attitude "Well, we can do this." Traditional innovation to the mining industry would be "Let's have automated trucks." Then we came up with the notion "Let's get rid of the trucks. Why have trucks at all?" When you start pushing that, you get massive resistance at first, and the corporate antibody attacks to kill the idea. Once people recognized, however, that the company was serious about sustainable innovation, they grabbed an idea and then suddenly all of these wonderful ideas came along. The ideas and thinking that came from people, who up to that point had been ignored, were phenomenal. "There are no trucks and we really believe that. How fantastic. Now let me tell you what I've been thinking about."

Doug: It's similar to the paradigm shift from big batch steel production to continuous roll steel production and the mini mill concept.

Peter: We are hearing examples like that. A major resource area in Australia was considered worthless by a major mining company. A new mining company acquired the resource area in 2003 and innovated. It made its first shipment in May 2008 and the new company is valued at \$26 billion. This is an asset that a large mining company, through their existing lenses looked at and said, "It's worthless," and walked away. Most of the people who are making it work in the new company are ex-employees of that large mining company.

This begs the question: "Can big companies innovate fast enough from a sustainable basis to continue their growth, or will they just be overtaken by these newcomers?"

Doug: Are there any other broad topics that you would like to get across?

Peter: One is the organization model. Innovate and move away from a hierarchical model to something that we've coined, TOPS - Thin Operating PlatformS. This speaks to an organization that's not hierarchical; an organization that has minimal people at the production point. It is a network of centers of excellence from within, going out into the external world. We've been able to effectively inject a notion into that model, which is, like-minded groups of people who are self-directed can be as effective, or more effective, than directed groups of people who are managed from a hierarchy. This model will act as a more effective foundation for innovation.

Another area has to do with the thinking around the value chain. The thinking of the past was, "I control this piece of a value chain and therefore that's what I care about." We've been able to expand that thinking to, "No, no, no. A value chain should be thought of from 'where your product is' all the way to the very end use of that product." When you do that in the mining industry, the bulk of that value chain is not controlled by the company, and in fact, most of the value is not in the piece that they control. It starts moving their thinking to value capture rather than cost reduction and production increases. Our notion is to change the thinking from 'being mining companies' to 'being logistics companies.'

That then, allows a lot of business model innovation. An example would be a miner who used to say, "As soon as I put my stuff on the ship in Australia I don't care about it anymore." However, miners now realize that the bulk of the cost to the end user in China was the transportation cost incurred from the time it left Australia. The company created a logistics business that looked at improving logistics to and within China. One innovation that resulted was to look at ways to effectively barge raw materials up the Yangtze in a much more efficient manner. That's an example of moving the thinking and creating new business opportunities that capture value.

