

Speech

Daniel Malchuk

President BHP Billiton Minerals Americas

World Copper Conference 2017

3-5 April- Santiago, Chile

Session: Mining strategies for the 2020s

Good morning, thank you for the invitation to be here today.

It is a pleasure to be in this room with you, the key participants in the world copper industry, to have a conversation about our future, a future that is in our hands and that we can begin to forge today.

But let's start by quickly recapping where the industry is currently.

The diagnosis is known. On a global level we are facing increasing challenges in the copper industry: declining grades, deeper deposits, harder ore, labour productivity problems, and higher expectations from host governments and communities. That's all well-known and has been extensively discussed in this and other forums.

It is not necessary to continue talking about the factors that have led to this situation. We must begin to discuss what to do to change our future.

As these charts clearly show, if we don't take a proactive approach, the copper industry in Chile will reduce its global position in the next 25 years in line with the natural deterioration of its assets, which will reduce the attraction of investing here in comparison to other jurisdictions.

As someone told me the other day, this is one of the few industries where you go to bed and when you wake up the next morning you find that your business's key source of value is worse than the day before.

Mining is becoming more challenging not only due to technical reasons but because the external environment is also a lot more difficult. But mining is also waiting for us to transform it and this is what I want to talk to you about tonight. Even though many of these challenges are applicable to the global mining industry, considering the place where we are, and the audience, I will primarily focus on the Chilean copper industry.

We are at the right time to begin the transformation of the Chilean copper industry for the next quarter century. And if 25 years seems like a long time period to you, the reality is that the benefits that we are enjoying now as an industry is a result of policies and decisions made 20 to 30 years ago.

However, change will not be straightforward. Our challenges are massive, for example in the area of labour relations, as shown by the recent collective bargaining process at Minera

Escondida. But no matter how difficult, what's certain is that change and transformation, is a fundamental part of keeping the industry alive for the long term. As producers, we cannot shy away from this responsibility. Nor can we do it alone. Together, as an industry, as a country, we must take on this task.

Before talking about the challenge of transforming the industry, let's review some history, one of my favourite subjects.

In the 1960s, the United States was number one in the global copper industry – it had large deposits, good grades... it was a vibrant industry.

But between the decade of the 1950s and the beginning of the 1980s the scenario changed due to the same pressures that the Chilean industry is facing today: grade declined 42%, and their share of global copper production declined from 26% to 11%. The sector's employment fell from 37,000 people to 13,000. In 1982 Chile overtook the US and became the world's number one copper producer.

But then we saw a turnaround. From 1983 to the peak in 1997, we saw an 89% increase in copper produced, despite a grade decrease of 10%. In that period, the US was able to claw its way back to producing 20% of the world's copper in the mid-1990s. Although since the end of the 90s the share of US production has declined to 8% of global output, and grade is at an all-time low, the industry has survived and today continues to be an important player in the global landscape.

So what were their levers to achieve this? It wasn't the development of new deposits. Nor was it a significant price rise as we can see from the chart. Instead, they used a big dose of self-help, drive and future vision that increased productivity and addressed key challenges.

The primary driver behind this turnaround was the reduction in costs and a surge in labour productivity due to new technologies. During the 1980s, initiatives that reduced operating costs included a significant increase in SX EW process capacity, improved mine planning, automated control systems, and higher-tonnage trucks.

Clearly the conditions for this turnaround did not simply happen overnight – the foundations for success were laid 20 years before. In the mid-1960s, the US was focused on stimulating growth and civil rights, creating the institutional framework for public private partnerships to improve people's participation in their own job training and community development. Furthermore, the country experienced a fundamental shift in identity towards seeing themselves as high-tech – an entire generation was inspired by the space-race, setting conditions ripe for intellectual development.

It takes a whole society, and the effort of decades, to enable the conditions for a significant increase in performance, a step change that leads to the transformation of the whole industry.

Perhaps the US could have survived without mining, but in Chile, mining is indispensable. We are one country with mining, and a very different one without it.

So the central question becomes, where does Chile sit now in comparison to the US experience? Chile now produces about 30% of the world's copper, with an average head grade of 0.7%. How will we respond to a similar challenge to the one faced by the US?

The key lesson from the US experience is that we need to be proactive and take in our hands the task of transforming the industry. But this is a goal that is bigger than a single company, it involves the whole country. We all have a part to play in this enormous challenge.

There are many influencing factors but I want to focus on three of them:

1. Enhancing the effectiveness of our workforce and communities by capability-building through public private partnerships
2. A step change in improving our performance, both in safety and productivity, through the use of technology;
3. And creating a culture that promotes high performance, in which Inclusion and Diversity is one of the fundamental levers.

Public private partnerships

The first lever is to enhance the effectiveness of our workforce and other key stakeholders, to build their capability to help them respond satisfactorily to future requirements and the continual global productivity challenges.

The public sector plays a crucial part in this effort, as public policy must respond to new performance standards in a different way to how it happened in the past. We want and expect to have world class standards to operate, although these need to be matched by robust public institutions which can deliver their mandates at the same pace and quality as the regulations call for. In this way we can continuously raise the bar to improve the capability of the whole industry.

This requires us to forge strong public private partnerships to materialize our efforts. The good news is that we already have some examples in this area:

- The Consejo de Competencias Mineras - a collaborative effort to develop and improve competency standards.
- Training centers such as the CEIM in Antofagasta which provide high-quality work training, aligning the skills with the disciplines where we need them most.
- The Alianza Valor Minero – which, in one of its lines of action, seeks to generate early dialogue with communities, strengthening their capabilities so that they can partner with industry.

These examples are evidence that if we work together we can raise the capabilities of the industry as a whole and benefit everyone.

Collaboration in Technology

Moving to the second lever of value: How do we achieve a step change in the safety of our workforce, by removing them from hazardous work, unlocking growth potential, increasing volume and cost efficiencies beyond our imaginings?

As we look to the future we should reflect on the mining industry's performance on the international stage. The numbers are sobering. Despite all our investment and increases in scale, labour productivity has only grown at 0.7% in the last 50 years, while the manufacturing and Information Communication technology industries have performed far better at 2.2% and 4.4% labour productivity growth respectively.

But what do they have in common with us? These industries create technology as part of a collaborative ecosystem. As Amazon CEO, Jeff Bezos, said: “If you decide that you’re going to do only the things you know are going to work, you’re going to leave a lot of opportunity on the table.”

Of course much of the technology that we are working on is proprietary. However, there are some elements of open technology that we collaborate on that I can share such as:

- An open protocol that enables plug and play autonomy solutions for mine vehicles, so that any vehicle – irrespective of its manufacturer - can be operated autonomously with almost endless benefits: safety, flexibility, remote work, optimised cycle times across the system, etc.
- Or another project for online monitoring of the physical and chemical stability of tailings facilities, to bring visibility and thus build trust with our communities.

BHP Billiton works with Fundación Chile, Codelco, Antofagasta Minerals, Sernageomin, the DGA, the Ministry of Mining, Corfo, universities and, of course, our communities.

Culture

The third lever of value is culture. A culture that exists in service of performance, that drives success, which comprises the everyday behaviors of our workers, what we promote, what we encourage and discourage, what we tolerate and how these result in tangible safety and productivity performance metrics.

Inclusion & Diversity is one of the elements of culture. Inclusion and Diversity is a creator, an engine of value. Diversity promotes innovation and fosters access to talent.

As an industry we have much further to go in creating an inclusive, engaging environment for all people regardless of gender, nationality, race, socioeconomic background, sexual orientation, and any form of disability or age.

As BHP Billiton, we have started this journey by committing publicly our aim to have gender equality in our company globally in 2025. This requires a fundamental shift at our operations as well as the industry environment.

It has been widely demonstrated that diverse workplaces deliver better performance.

I’ve spoken today about three levers of value that I consider important to make a step change in the industry. Levers of value that are ‘outside the box’ of typical productivity measures and that can speed up the change that our mining industry needs.

As I have mentioned, we cannot do this alone. It involves pretty much every actor in the industry: our workforce, communities, suppliers, researchers, regulators, policy makers, and also the larger civil society through a better understanding of what we do and why we do it.

Each of these three levers can create value for mining. But, in the long-term, they will also create value for the economy. As I said at the start, Chile is a fundamentally different country with and without mining. Let’s make sure then – including others outside the industry – that we work on the conditions to make mining sustainable for 100 years more.

Success will involve us taking a cold hard look at where the Chilean copper industry really is now, and where we want to go in the long term. We have historically had an excessive reliance on our rich geology which to some extent hid the lack of progress in other areas.

We can't just sit still and use the same recipes for success that worked in the past. We must be more determined and daring to face together the next 25 or 100 years. Let's think big. Let's think together. Our opportunity to transform the mining industry is here. It's up to us.

Thank you very much.