RIO TINTO

SCIENCE AND TECHNOLOGY IN SOCIETY (STS) FORUM

PANEL DISCUSSION

TOM ALBANESE,
CHIEF EXECUTIVE,
RIO TINTO

DEVELOPMENTS WITH SUSTAINABILITY

KYOTO, JAPAN

9 OCTOBER 2007

Thank you, it’s a true honour for me to be speaking to you today.

I’d like to talk about innovation in the mining and metals industry, sustainable development and what we at Rio Tinto are doing in this regard.

In my office I have a 400 year old book on display. This book represents a compilation of mining technology of those days.

It is a fascinating book, being one of the world’s first engineering treatises with innovations such as hoisting, hydraulics, water pumping etc. There is even a section on the environment.

The good news is that our industry was a true early leader in technology and innovation.

The bad news is that I recognise in the illustrations of this book many mining practices still in use today.

By the nature of our industry, we are not an aggressive innovator. Our product lines and investments are measured in decades. Rio Tinto’s most profitable business has been around for over 100 years.

Our innovation is generally around reducing unit costs and increasing production, versus the creative destruction typified in some industries.

As a matter of fact, Rio Tinto, like the whole industry, has under invested in R&D up until recently due to lower prices for our products.

Now though, we have a strong business case to innovate, especially as China and other countries begin their path of industrialisation and urbanisation.

In our session yesterday I heard an interesting statistic about copper from Megan Clark. Over the next 25 years the world will consume as much copper as in all past human history.

This is a lot of copper, but it’s a consequence of giving everyone the hybrid cars, iPods, five billion cellphones and the new innovative products we have discussed these past few days.

This means we have to move quickly to find more copper, and take step changes to mine and process more difficult deposits.

Second, while the world wants more copper, they don’t want the mess that sometimes comes with the metal. Stakeholder expectations are much greater for things such as global warming, water and biodiversity.

If we don’t innovate to reduce the size of our footprint, those who ultimately give us our licence to operate will no longer let us do what we do.

So, what have we and some others in the industry been doing in the areas of both innovation and sustainable development?

Since about 2000, Rio Tinto and many of its peers have recognised that the best way to reconcile wealth creation with environmental and community concerns is to relate our activities to the concept of sustainable development.

Concern for the future of the planet and our descendants should affect all businesses.

We have decided Rio Tinto should not only be a fast implementer of technology developed by others, but also take the lead in areas that have particular significance and leverage for Rio Tinto, such as remote operation, automation and robotics, decarbonised coal, cleaner iron and aluminum smelting, and greater emphasis on underground mining to avoid the disturbance caused by surface operations.

All of these improvements will help us contribute to sustainable development.

Automation will bring about superior performance, reduced use of energy and water, a smaller environmental footprint, and alignment with the lifestyle aspirations of our employees.

We are being challenged to find sufficient numbers of people to meet the increased demand for our products. Automation has the potential to sit comfortably alongside our existing highly skilled workforce.

Most significantly, tremendous computing power and precision in global positioning systems offer a future in which our capital equipment is used with unparalleled safety, efficiency and productivity.

Automation and robotics is of course familiar to manufacturers, especially the automobile industry here in Japan. For our industry, it is comparatively new, but we are making strides in the operation of automated drill rigs and railway locomotives.

Rio Tinto has developed its vision for the mine of the future.

In surface mining, excavators and draglines will do much of their operational thinking for themselves. Driverless trucks will ferry their loads around the mine, automatically reporting to the workshop as maintenance falls due or faults are predicted.

In the processing plant, sensors will make constant fine adjustments to win more metal from the ever varying stream of ore, using less energy, water and time.

Operators can be located in an urban mission centre a couple of thousand kilometres away, running the mine “hands off”, scrutinising functions in minute detail from an avalanche of data, and adjusting the workings ever closer to the technical limits.

In this vision we still see open pit mines, with the largest trucks in the world, but with no drivers. This could we with us within three to five years if we push hard.

Rio Tinto's Iron Ore group in Western Australia is currently the first testing ground for the automation of a range of equipment and remote controlled operation of mines, processing plants and trains.

A new control centre in Perth is being tested to direct and monitor operations at the West Angelas iron ore mine 1,200 kilometres away, and we are now trialing automated train driving systems.

Another measure of our technology and innovation expansion is a recent commitment to a new R&D centre for mining automation at the University of Sydney.

We are also working with large Japanese companies on automation technology.

A new generation of sensor technology needs to be designed, together with mathematical rules for robotic machines to navigate their surroundings.

At Rio Tinto we seek a step change in innovation over a five to ten year timeframe. Our focus is to introduce new assets or processes into our production chain.

We are currently completing a transaction with Alcan that will make us the largest aluminium producer in the world.

Alcan's leading research into greenhouse gas reduction and energy efficiencies in aluminium smelting, conducted both in Canada and France, will be a big part of our sustainable development efforts.

In Australia, we have been working on a new steel making technology that does not require the coke process, reducing pollution and carbon emissions.

The Chinese Government is quite interested in this technology and shares a joint venture interest. Both the Chinese president and premier have visited this facility.

Finally, we have recently entered into a hydrogen energy joint venture with BP. This is designed to convert coal and other hydrocarbons to hydrogen, while capturing and storing carbon dioxide.

As we have heard today, clean coal will be key to solving the urgent problem of climate change.

We at Rio Tinto want to change the way we operate in a way that enhances our competitive position, adds value in a major way and minimizes our environmental and social footprints for a better cleaner world.

Thank you.