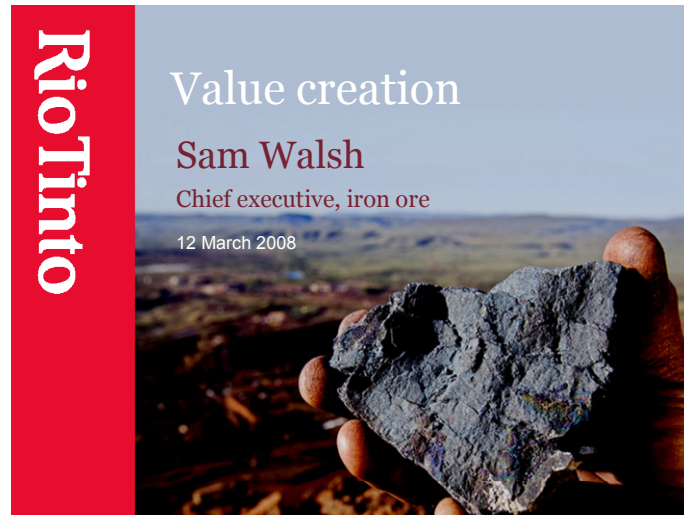


# AJM Global Iron Ore & Steel Forecast Conference

Perth, 12 March 2008

## Value creation

**Sam Walsh, Chief executive - Rio Tinto Iron Ore**



First of all I'd like to congratulate the organisers of this event, the Australian Journal of Mining, for this impressive event. We are very pleased to be again sponsoring the conference and the very many impressive speakers and audience testify to its broad endorsement by the industry.

This time last year, my colleague Phil Mitchell appeared in my place this year, and thoughtfully promised to use a few photographs of me in his presentation. This year I'm happy to say I am the one presenting and we'll all be happy to see there will be no photographs of me, or Phil.

Casting our minds back, I suppose all here would agree it's been an extraordinary year, and certainly a very busy one.

Yes, this is an extraordinary time to be in iron ore, and yes this last year the pace has picked up. But perhaps what is most notable is how strong are the fundamental drivers of our industry, and what we at Rio Tinto are doing to stay ahead of this momentum.

To illustrate: Phil Mitchell a year ago identified three priority areas for Rio Tinto iron ore:

- Continue to deliver value through profitable and sustainable growth
- That thinking and operating globally will be essential to our success
- Government and community commitment and expectations are increasing

These were not new themes a year ago and nor have they changed since. They remain precisely our focus now. Irrespective of the progress of various commodity prices, changes of government, shifting stock market fortunes or the unsolicited attentions of others, we have a clearly defined strategy and we will continue to follow it.

Indeed, we believe one principal reason for our leadership in the Pilbara is precisely that we went counter to the prevailing mantra of a decade ago and anticipated the trend which now dominates the thoughts and dreams of everyone in this room. And I refer here not just to the world economic growth, but to the resources boom in general and the iron ore sector in particular.

Let's head down memory lane for a moment.

1998-2000. The era not only of the dot-com company, but more specifically the *mining.com* phenomenon, in which companies felt moved to re-brand themselves as technology plays in order to attract the interest of an increasingly uninterested investment community. Institutions, fund managers, advisors, brokers – even the financial media – all appeared unimpressed, and sometimes worse.

To many, mining was:

- Old world
- Low-tech
- Low value-add
- Without a future, and...
- There was no money in it

As I look around me, I can see that they didn't get that right. In fact, they didn't get any of it right.

We now know that mining – or rather, successful mining, is:

- Modern
- Sophisticated
- High-tech
- High value-add
- Has a great future

We are all contributing heavily to income tax cuts, new government projects and area about to become Australia's number one export commodity.

It was in the year 2000 that Rio Tinto bought the former North Ltd, which included the controlling interest in Robe River and Iron Ore of Canada

It was this purchase, back when our peers were tightening their belts and reducing investment that helped establish the platform for the current expansion, one which will see our Pilbara capacity double in a little over five years, and our world wide operations expand at an even greater rate.

So, enough history. Where are we now, and what are we going to do about it?

**RioTinto** Overview of today's presentation

- Introduction
- Global economy
- Iron ore market and future growth - demand
- Financial overview – pricing
- Global business – supply
- Delivering value – mines, trains & ports
- Adding value – smarter, faster, better
- Conclusion

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Today I will take you through a rundown on what we are doing, how we are placed in terms of customer demand for our products and how we satisfy that demand, and I'll look at what opportunities there are for us to improve on what we do.

In particular I will seek to show how we add value to our operations - performing faster, smarter and better than we did before, and in a way that compares more than favourably to the efforts of our competitors.

**RioTinto** The only iron ore producer with a truly global supply strategy

• Operating asset  
• Development asset  
■ Markets supplied

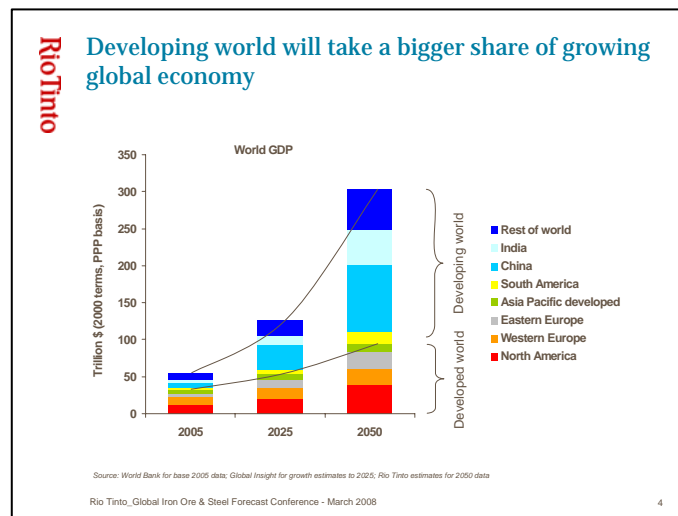
\* Hamersley Iron participates in the following joint ventures - Channar (Rio Tinto 60%), Hope Downs (Rio Tinto 50%) and Bao-Hi (Rio Tinto 54%)

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Rio Tinto's strategy is to invest in large, long-life, low-cost developments that prove their worth over decades. Rio Tinto Iron Ore operates to a 40-year mine plan, and we invest accordingly.

In this business you need to think long-life and large-scale. Nothing could better sum up our iron ore operations than this. Rio Tinto has invested around the globe to ensure that this continuity of supply can meet the peaks of demand.

We are the only iron ore producer with a truly global platform and supply strategy able to meet that demand. This map shows our current expanse. And the global headquarters for this operation is right here in Perth, just further up the Terrace.



The global economy is growing, and growing ever-more rapidly, and one essential ingredient of that trend is steel, and therefore iron ore.

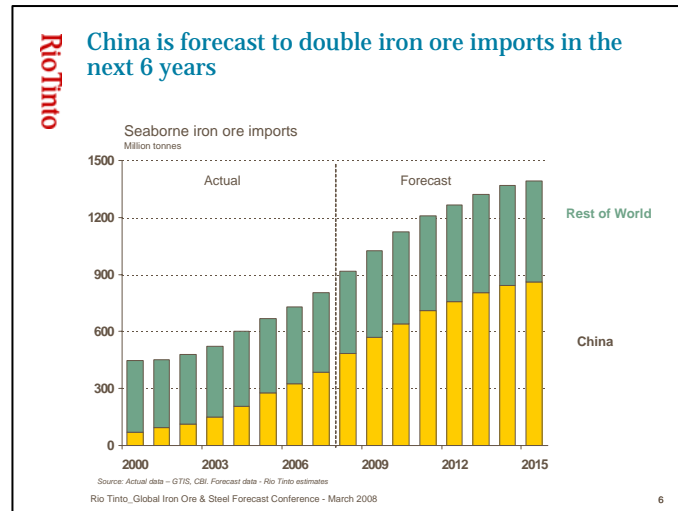
As you can see, the level of growth in “developing world” is gathering pace quickly, and is forecast to do so exponentially. I will shortly look more closely at China, which is by far the main contributor to iron ore growth at the moment, but you should also note the increasing impact for other regions.

In time, I believe that not just India, but also the Middle East and even some of the economies of Africa may follow that pathway being carved out by China. At present China accounts for well over 90% of all global growth in the iron ore market – repeat, well over 90% of all global growth – but that will not always be the case, even maintaining their astonishing rate of modernisation.



Our belief in the sustainability of the China story is based on the fundamentals of economic development.

We believe that China's demand for iron ore is driven by its own rapid economic growth, the commodity-intensity of that growth – which we call the steel intensity curve, or the rate of steel usage per capita – the increasing dimension of meeting that demand through domestic supply and a “decoupling” of its economy to downweights such as the fallout from the “sub-prime crisis” in the United States.



As a global iron ore and steel forecast conference, I doubt there would be anyone here today unaware of China's increased demand for iron ore. However, perhaps what might be less appreciated is the sheer speed of this uptake. And that extraordinary growth curve has resulted in the Chinese economy now accounting for more than half the world's iron ore imports. The two things to note here are not only the seemingly irresistible increase in seaborne iron ore, but the corresponding – almost matching – increase in China's intake of iron ore.

Also significant, of course, is that the consensus of forecasts continues the trend that we have seen to date.

**RioTinto** **Decoupling**

- Rio Tinto estimates Chinese growth is sustainable at around 9% over the longer term.
  - Likely to become more focussed on the domestic economy over time
  - Cycles in growth can be expected
- In 2008 Chinese GDP estimated to grow at around 10% even if the US were to go into recession.
  - Jury still out on whether we will see a US recession ... but
  - Modelling conducted for Rio Tinto suggests that Chinese GDP would be reduced by less than 1 percentage point if US external demand were to slip to recessionary levels
  - The Chinese government's fiscal response to any slow down in growth would likely involve more spending on infrastructure
  - Shifts in global investment flows in the event of a US recession would likely favour China

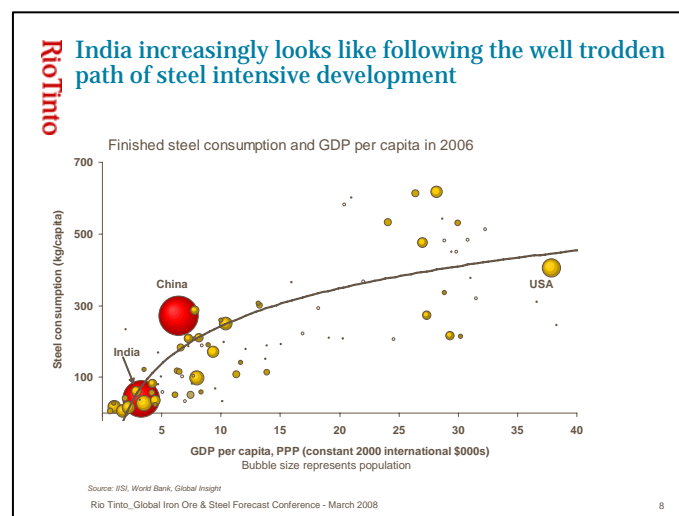
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Why so? Essentially, a certain momentum has developed in the Chinese economy that we believe should defy most hurdles or constraints that we can envisage. There will always be cycles, mini-cycles and volatility, but I note that China is expected to grow at about 10% this year [2008] regardless of whether the US economy goes into recession.

This is what we call “decoupling” of the Chinese economy from that of the world’s largest economy, and it has potentially great implications not only for the Australian economy, but for the iron ore industry in particular.

I emphasise that we do not know for certain whether the US will slide into recession, but it is becoming increasingly apparent that, at the very least, a slowdown is in train. Overall, for a variety of reasons we expect the cumulative effect of the current American difficulties to be less than 1% to Chinese development.

Our reading of the economic growth rate of China is informed by the extent of its fundamental driver – its own people. It is sometimes wrongly assumed that this is a Great Leap Forward of industrialisation, a factor of centralised mandate, when the reality is that it is a mass urbanisation that is occurring.



Urbanisation manifests itself in many forms – buildings, cars, public infrastructure, domestic appliances – but what many of them have in common, and what is the significant issue for us here, is that most of these require steel. They require iron ore.

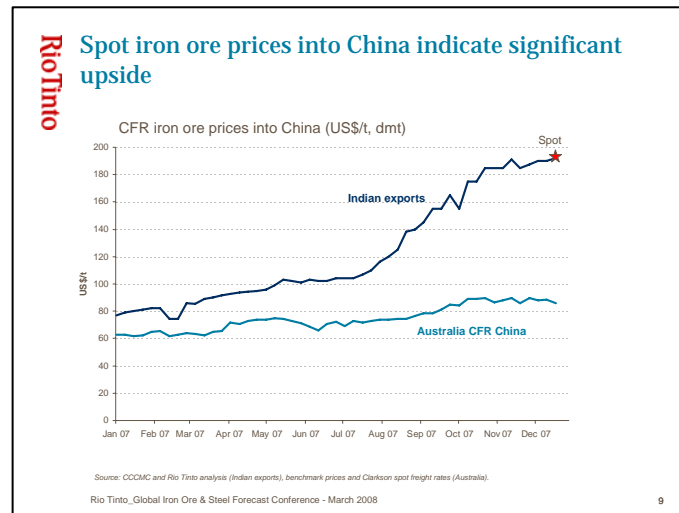
Who will meet that requirement? At present, almost half of China’s demand for iron ore is met by domestic production or by Indian producers. And most of that is very high cost and sold at record high prices on the spot-market, about which more in a moment.

Indian iron ore is increasingly constrained by its own domestic requirements, as its economy begins to follow the steel intensity curve already followed by China, but also by the Indian governments’ imposition of export taxes.

Simultaneously, Chinese production is becoming increasingly challenged by the relatively poor grade of its production and the increasing cost in producing it. And that is before we take into account the strengthening RMB and the effect that will have on local competitiveness.

China's growth is well-established, but even there observers note that much of the population is yet to experience the same rise in standard of living that their countrymen and women in the coastal metropolitan regions have. In time they will, many of them: a simple demographic inevitability of human aspiration and fulfilment.

The steel intensity curve shows that the other great force of Asia, India, is yet to embark on that same growth surge, but there are signs that such a trend is not far off. No-one ignores the systemic hurdles remaining to be overcome, but the implications for steel consumption and iron ore demand when they are should be recognised.

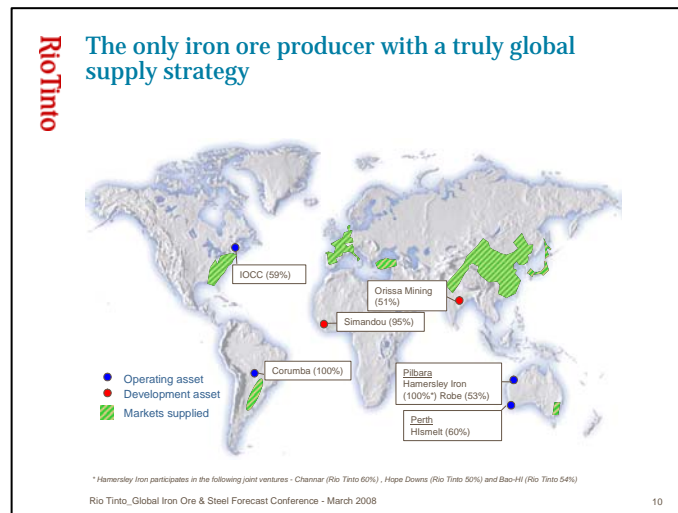


One fundamental economic truth of course is that such costs and hurdles can only be overcome if the final price earned is able to justify the outlay. The fact is, at present, it does. When you have prices for opportunist or short-term trades – the spot market – ranging to double that of long-term benchmark prices [meaning an extra US\$100 or more], then you can justify production of poor quality ore, and you can make a profit despite higher costs of production, or government taxes or levies.

In December Rio Tinto announced that it would increasingly be active in that spot market while this gap continued. We announced that we were prepared to sell up to 15 million tonnes of iron ore on the spot market. [And we have remained true to our contracts in so doing]

Despite repeated urging on our part, Rio Tinto iron ore from the Pilbara continues to be sold without the premium we believe it merits for being so much cheaper to import than iron ore from elsewhere – a fair return for the saving on freight, the natural premium of geographic proximity.

I will not provide a running commentary on pricing negotiations while they continue, except to say that until some recognition of the natural premium of geographic proximity is possible, and while the spot market continues to reward those without long-term benchmark supply contracts with customers, then we will do what we can to secure an appropriate return for our shareholders.



So much for demand, which is only half the equation. In meeting that demand, Rio Tinto is in the best position to provide iron ore not only from our Pilbara assets, which are substantial, but as a result of our global supply strategy and platform.

We are the only producer with a truly global supply strategy and a proven capability to deliver, and we are well-placed to meet not only the extent of demand, but the increasing prospect of more than one region 'booming' at the same time. Wherever major markets are established, we should be well placed to supply.

Our strength in the Pilbara is well known, but it is our global reach that increasingly sets us apart. We are already well established in the Americas through our existing operations with the Iron Ore Company of Canada and Corumba in Brazil, both of which are expanding.

Corumba is a high-grade operation in south-west Brazil, which we are in the process of studying an expansion to more than 10 million tonnes annual production. There are a number of new features planned or in place, including a new dry-ore plant, new port arrangements and efficiency improvements.

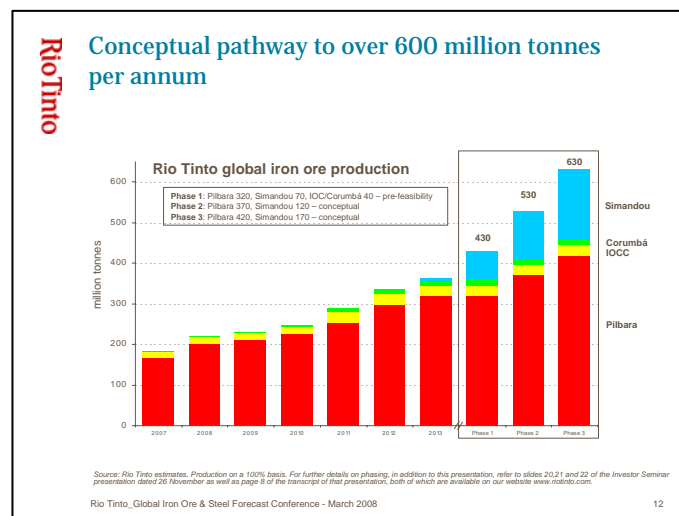
We have today announced a further upgrade of our Canadian operations, increasing IOC's annual capacity by 22 percent from 18 million tonnes to 22 million tonnes, at a cost of almost US\$500 million. And taking into account feasibility studies already underway, this represents only the first phase of a three-year plan to increase IOC's annual capacity by 50%. This comes on top of the five-year labour deal we sealed last year with our workforce, ensuring the way forward is bright indeed.

If there were any doubt, Simandou, our major new project in Guinea, west Africa, should provide ample evidence of our determination to develop and deploy this global platform.

We believe that Guinea is a major new iron ore province, comparable in many ways to the Pilbara 40 years ago, and hence our excitement as we draw closer to the development phase.

Simandou and its surrounds contains a very high-quality hematite deposit that we estimate will provide an annual production of 70 million tonnes – which would make it larger than any iron ore mine in Australia - and one able to expand to at least 170 million tonnes. To put it in perspective, that’s more iron ore than Rio Tinto produced from the entire Pilbara last year.

Such is our faith in this new development, one of the premier greenfields projects in the world, that last month I appointed Dr David Smith to head up the project. Dave, as many of you here will know, was the head of the Pilbara mine operations for Rio Tinto and was also the President of the Western Australian Chamber of Mines and Energy. He is already in Conakry, the capital of Guinea, along with the 850-and-growing staff and contractors we now have mapping out the feasibility and ensuring such a massive undertaking proceeds on a sound footing.



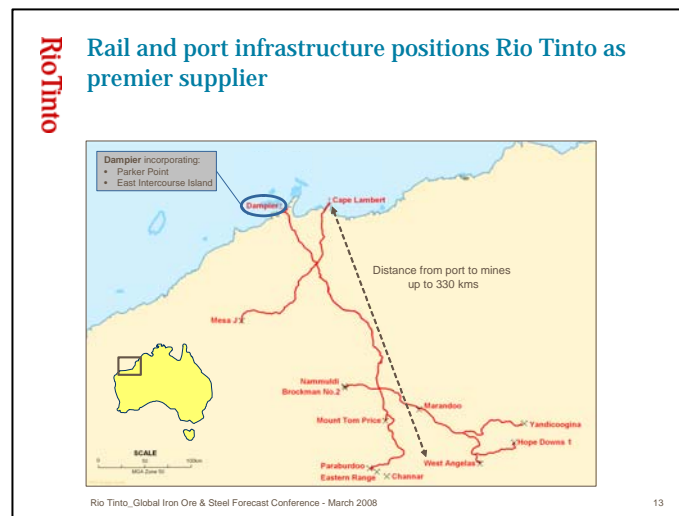
The “Simandou effect” can be identified here, as it builds on an ever-expanding Pilbara base over the coming five years and beyond.

We will reach an annual capacity in the Pilbara of 220 million tonnes next year [2009], itself a doubling of capacity in seven years. But that is just the start of it.

In 2012 we will be ramping up towards an annual capacity of 320 million tonnes, and we have announced a roadmap towards exceeding an annual capacity of 600 million tonnes a few years later.

It is worth noting that this not only includes expanding existing operations and embarking on several new mines each year, but also and increasingly replacing tonnage as older mines are depleted and closed.

Reaching an annual production capacity of more than 600 million tonnes is quite a feat. Maintaining that rate for years to come, as we must do, should give you some idea of the immensity of the undertaking.



For now, the Pilbara is the foundation for our strength, and it will remain so for decades to come. Our network of 11 mines, with two new ones already approved, and complementary rail and port infrastructure is unparalleled.

As you can see, it stretches from the coast through to the original heart of Tom Price, includes the old North network from the Robe Valley through to Cape Lambert, and increasingly into the East Pilbara as well.

While the 320 expansion feasibility study is continuing, it is fair to assume that the spaces between the various mines will slowly but inevitably fill as we continue to leverage off existing infrastructure to extract greater value from our investments.

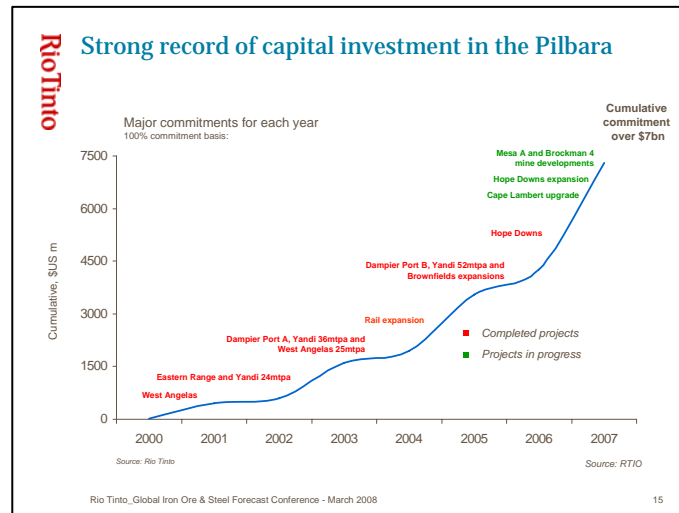
Many of our undeveloped deposits are close to our infrastructure, and therefore carry with them an ability for new projects to be accessed for relatively modest additional cost – what we call our “expandability”.

**RioTinto** Leading iron ore resource position in the Pilbara, supported by one of Australia's largest drilling programmes

- 500km of drilling planned per annum from 2008 until 2012
- Approved resources are being converted into recoverable and viable reserves
- Supports the expansion work that is underway
- Provides options for future growth
- 5 year commitment to spend approximately A\$500 million drilling in the Pilbara

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As disclosed in our presentation on 26 November last year, in the Pilbara, Rio Tinto has identified 14.2 billion tonnes of reserves and resources, and is targeting additional mineralisation of 20 to 30 billion tonnes. We drilled about 400,000 metres last year and will do about 500,000 metres this year. This not only supports the expansion program that is underway, but also enables the speedy conversion of targeted mineralisation and resources into recoverable reserves.

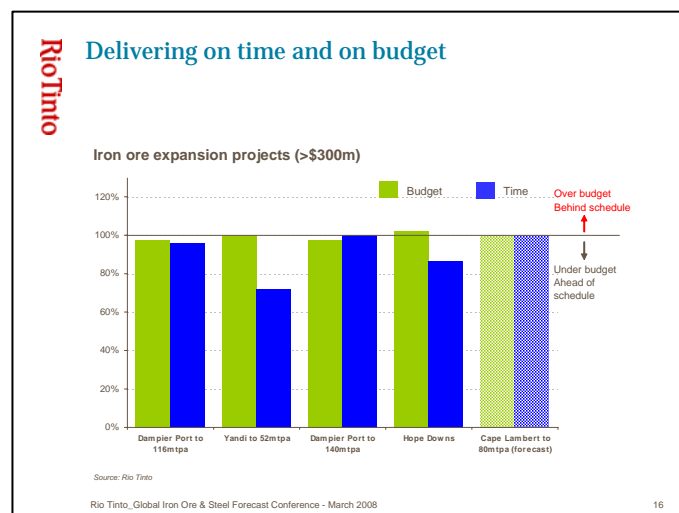


This program of exploration drilling, and brownfield and greenfield development, has certainly increased in recent years, but investment and reinvestment in our business is no recent phenomenon.

We can demonstrate an extensive record of capital investment in the business over the decade, highlighting Rio Tinto's preparedness to back its judgement when many others were winding back their operations or rapidly learning how to sound like an internet market darling.

The record of capital expenditure since 2003 now exceeds US\$7.5 billion, which exceeds our entire net profit from iron ore in that time. That is a record of reinvestment in the business to which few others could aspire, let alone achieve.

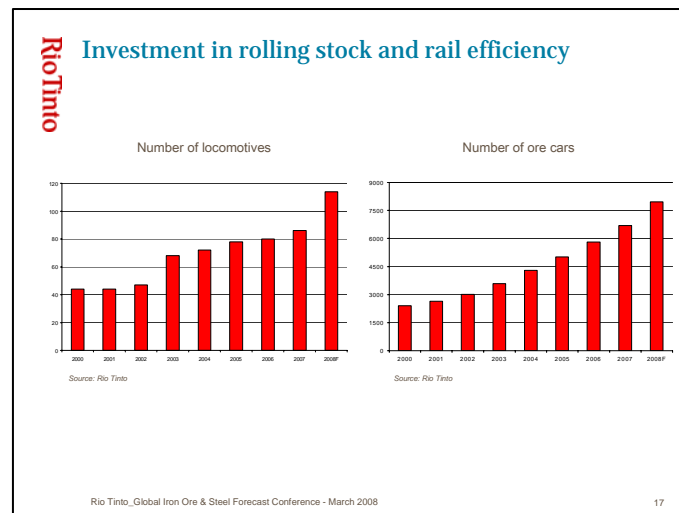
We are midway through our feasibility study for reaching annual capacity of 320 million tonnes, and when that is finalised next year I think I am going to need a larger graph.



Such an expansion program requires great people and strong systems, and an ability to get the job done – on time and on budget. We have solid grounds for this claim, and as we enter into this latest phase of expansion we believe this ability to deliver our projects as planned will be critical to our success.

The escalating cost of projects is already a clear factor in many companies' planning at present, and most economic forecasts would suggest this will only increase.

A demonstrable ability to manage projects and deliver expansions within fiscal and timeline parameters is critical to Rio Tinto's current and future success.



For an integrated production process such as ours, obviously our demand chain must at least keep pace with our mines development and resources base. In January we took delivery of 10 new-generation EVO-locomotives, with a further 30 locos on order, as we progressively upgrade our rolling stock.

These locomotives use a 12-cylinder, 4,500-horsepower engine that offers improved fuel efficiency and more flexible maintenance requirements than the existing Dash-7 and Dash-8s, which are up to 30 years old.

The upgrade of the fleet is in tandem with the addition of 1,200 new ore cars in 2008, about 500 to cater for expansion and another 700 to replace the ageing cars that have been operating for up to 40 years. As with the locomotives, fleet maintenance and performance will be significantly improved with the investment.

By the end of 2008 our fleet will have expanded from 86 to 114 locomotives, and increase of 33%, with significant positive flow-on effects arising from a more modern fleet.

**Rio Tinto** **Rio Tinto's Pilbara port infrastructure is world-class**

- Current port capacity is 195mtpa:
  - Parker Point: 94mtpa
  - EII: 46mtpa
  - Cape Lambert: 55mtpa
- All three terminals managed together as one port:
  - Sharing of common support such as: Maintenance, Engineering, Safety and Scheduling
  - Optimisation of ship queuing and tug fleet
  - Balancing of ore production by product and grade through rail connections
  - Shared learning and standardisation of processes.
- Combined manning: ~800

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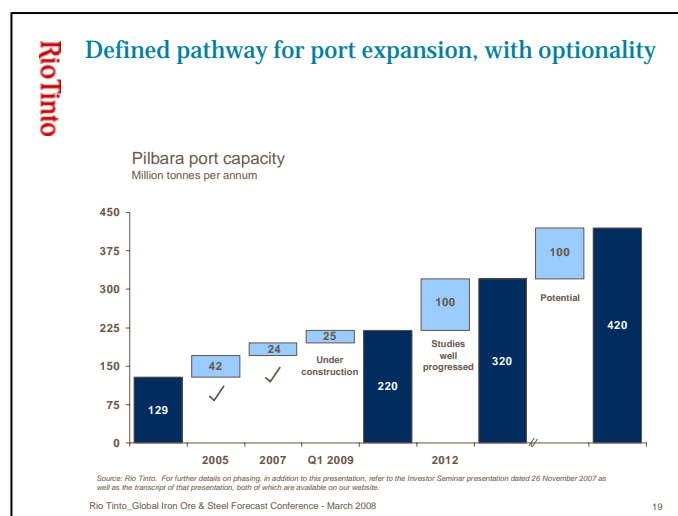
Similarly with our port operations, the story is one of substantial investment and reinvestment to ensure our network is well served at the “front end”, where the economies of scale and efficiency become truly apparent.

Our successful introduction of the “Pilbara Blend” last year has added to the operational efficiency, enabling a flexibility that can better cope with scheduling variability that would not have been possible when we marketed a suite of nine separate iron ore products.

The latest coastal expansion is being launched from a worthy base. We believe our three ports in two locations are second to none. And we believe that leadership, already a stark distinction, will only increase as our latest expansion phase kicks in.

Not only have we seen a significant upgrading in a short period of time, but also the maintenance of “expandability” which has enabled us to select the best strategy for growth, and then ramp-up to that target without significant disruption.

We have maintained a cumulative annual growth rate of about 9% across our port operations in this time.

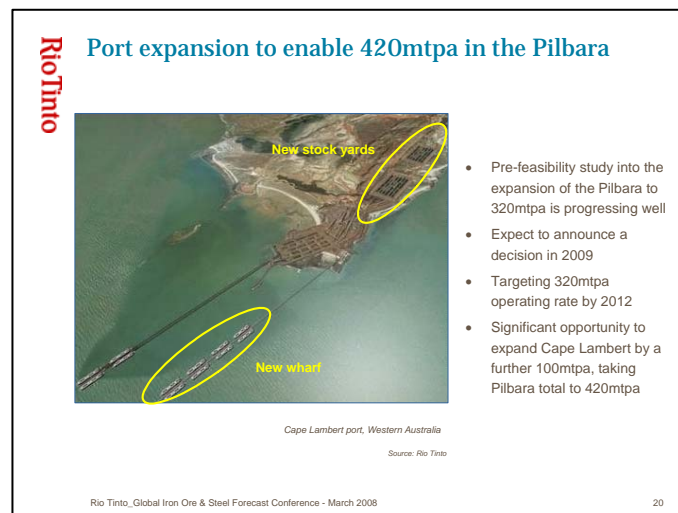


Well advanced in our study to upgrade annual capacity to 320 million tonnes, we clearly focus on maintaining the “optionality” we possess. This is an unprecedented rate of expansion, and that is why we have laid out a clear pathway to reach annual capacity of up to 420 million tonnes.

We have just completed our expansion of Dampier to an annual capacity of 140 million tonnes – our second expansion of the port in five years – and its combination of scale and relatively sheltered location, including a virtually maintenance-free channel, clearly establishes its superiority.

Similarly with Cape Lambert, about 50 kilometres to the west, its location (semi-sheltered with excellent deep-water access) and capacity for upgrade clearly identify it as a premier outlet for iron ore exports. We are midway through the first expansion of the port, from an annual capacity of 55 million tonnes to 80 million tonnes, but that is only the start of it.

In time, pending our ongoing studies, Cape Lambert may well look like this:




You will see there the existing wharf we are currently upgrading, extending to four berths along with a new shiploader we are installing.

Alongside it, circled, you can see what we can call Cape Lambert West. Under a 320 million tonnes capacity scenario, which we plan to realise in 2012, that would include four new berths for loading. And there is no reason why the construction of that should disrupt normal operations on the wharf alongside.

Under a 420 million tonne scenario, which is what I have depicted here, Cape Lambert West would include eight berths on an extended wharf. While no decision has been taken on that yet, such long-range planning as our 420 million tonne “roadmap” entails does allow the early provision for such development now.

**RioTinto** On track to automate the Pilbara



**Automation**

- Automated train operations
- Automated trucks
- Automated drilling
- Continuous miners

**Remote Operations Centre (ROC)**

- Successful prototype of pit and plant control from ROC in Perth
- Trials at West Angelas and Yandicoogina
- Extending to other sites in 2008

**EPI centre**

- Collaboration in a high tech environment eg mine planning

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We are the biggest iron ore producer in the Pilbara and the second largest producer in the world, but size of itself is not the point. We would not be meeting government and community expectations - not to forget that of our shareholders' – if expansion for its own sake was the goal.

Without that value proposition – creating it or finding and building on it – our business can be reduced to just so many mines, trains, ports and people. I would like to close this presentation by highlighting a number of ways we are seeking to create value through our operations.

At the beginning of this presentation I recalled the bad old days of not so long ago, when the mining sector was seen to be old world and low-tech. It wasn't true then and it certainly isn't true now.

Rio Tinto's investment in a range of innovative technologies and applications is intended to ensure we add value every step of the way, performing old tasks more efficiently and creating new roles to oversee those tasks. They include automation of our trains, trucks, drill and blast methods, high-tech tools such as our EPIcentre to facilitate mine planning, and new applications of old techniques such as continuous mining.

Construction is underway on our Remote Operations Centre, which will see an initial workforce of up to 320 people based in a collaborative environment, managing Pilbara mines and infrastructure from a purpose built offices 1,300 kilometres away near Perth airport.

**RioTinto** **Continuous communications – Advanced train control and signalling systems**



- Located at the 7 Mile yard facility, responsible for:
  - Approximately 120 trains per week
  - Servicing 11 mines
  - Approximately 1,300 kilometres of track
- Allows the train controller to issue commands:
  - Switch or point movement
  - Limit of authority changes
- Commands via microwave/radio or fibre optic system
- Mainline track's Integrated Control Signalling System:
  - Continuous update of driver's limit of authority
  - Location/ route data transmitted to train from track transponders
  - Automatic train protection for full speed and limit of authority supervision
  - Computer based train control system with real time train scheduling capability

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For our rail operations we have built a system of continuous communications, enabling a sophisticated signalling system enabling a reliable and instantaneous flow of data to a control system with real time train scheduling capability.

This integrated control signalling system is in place across our mainline track and fits with our existing control system at Seven Mile to ensure the steady “drumbeat” of iron ore is maintained down the 1,300 kilometres of rail network.

In time the train system will be based in the Remote Operations Centre, where the full value of collaborative management and integrated oversight will be realised.

**RioTinto** **Automated train operations (ATO) – Turning a concept into reality**

- Leading edge technology for heavy haul and freight rail
  - Two years of Research & Development
  - Automatic control system will be an extension of the existing advanced signalling systems
- Trials well progressed:
  - Simulator ✓
  - Segregated test track ✓
  - Short train on main line ✓
  - Full train on main line
- If the trials are successful, automated trains will be progressively introduced
- ATO will support further expansion and help manage skills shortage
- Decision expected to be made by April 2008

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Our ATO project, Automated Train Operations, is close to fruition. Trials have gone extremely well, and passed every test to date. We have successfully controlled fully loaded trains along 90 kilometres of our mainline 70 times already and if the remaining trials are successful we will progressively introduce driverless trains across the Pilbara.

There are obvious benefits to be gained in terms of replacing skilled drivers, who are in short supply, managing an expanded rail fleet and securing scheduling and operating benefits which are just not possible with the current operating system.

This is a very real example of adding value through more efficient logistics. I expect to make a decision on this project within the next few months.

**RioTinto**

### Mining In The New Dimension (MiND)

- RTIO Technology Division created in 2006
- Key tasks: sense, source, assess and progress potential step-change innovation projects
- 'Imagine the future DVD' (images shown) created to challenge current thinking
- Strong links to corporate Rio Tinto Technology and Innovation group



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I have dealt with some ways we are building greater value into existing processes such as rail operations. How we perform future tasks promises even greater opportunity for innovation, requiring a step-change in imagination and technology.

Rio Tinto has developed a concept we call Mining In The New Dimension (MiND), which is all about seeing exploring those possibilities and identifying the opportunities to create value.

It is a good example of how Rio Tinto's quest for improvement can benefit from the cross-fertilisation of ideas from across the different product groups.

**RioTinto**

### Technology Option Development

Key tasks -  
To sense, source, assess & progress step change technology options

Drivers	Technical Streams	Technologies
<ul style="list-style-type: none"> <li>• Improve HSEC outcomes</li> <li>• Meet customer expectations</li> <li>• Increase reserves</li> <li>• Reduce capital intensity (fixed and working)</li> <li>• Reduce energy intensity</li> <li>• Reduce people intensity and relocate roles</li> </ul>	<ul style="list-style-type: none"> <li>• Sensing</li> <li>• Excavation</li> <li>• Processing</li> <li>• Material Movement and Energy</li> <li>• Automation</li> </ul>	<ul style="list-style-type: none"> <li>• Ore Identification</li> <li>• Continuous Excavation</li> <li>• Ore Sorting</li> <li>• Materials Handling               <ul style="list-style-type: none"> <li>• Conveying</li> <li>• Slurry pipelines</li> </ul> </li> <li>• Energy efficiency               <ul style="list-style-type: none"> <li>• Hybrid vehicles</li> <li>• Regeneration</li> </ul> </li> <li>• Drill and Blast Automation               <ul style="list-style-type: none"> <li>• Ground recognition</li> <li>• Autonomous operation</li> </ul> </li> <li>• Autonomous Operations               <ul style="list-style-type: none"> <li>• Conveyers</li> <li>• Trucks</li> <li>• Trains</li> <li>• Remote Operations</li> </ul> </li> </ul>

**MiND Vision**

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As you can see, MiND leads into a series of technical streams – only one of which is automation – through which a large range of different technologies will be examined, assessed, adapted and applied.

Not for their own sake, but to see where we can extract greater value by:

- Improving HSEC outcomes
- Meeting customer expectations
- Increasing reserves
- Reducing capital intensity (fixed and working)
- Reducing energy intensity, and
- Reducing people intensity

**RioTinto** **Current key technology projects**

- Automated Drill and Blast – collaborative project with CRC Mining to develop autonomous drill rig with rock recognition capability.
- Continuous Excavation – current evaluation of Wirtgen surface miners. Encouraging results in specific applications, challenges remain.
- Remote Operations Centre – Project approved, facility at Perth Airport to be completed in Q3 2009.
- Automatic Train Operation – feasibility study to test fully loaded trains over 90km section of track in the Pilbara
- Autonomous Haul Trucks – Collaborative agreement with Komatsu, initial trucks to be delivered in Q4 2008.



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This is short list of technology projects we are actively exploring at the moment, and it is just a snapshot.

Projects include:

- Mine Picture Compilation, exploiting real-time geometric and geologic data and equipment disposition
- Continuous Excavation, evaluating Wirtgen surface miners. We are not alone in doing this, of course, and our results in specific applications have been encouraging - though challenges remain.
- Automated Drill and Blast – Collaborative project with CRC Mining to develop autonomous drill rig with rock recognition capability
- Vacuum Mooring at our ports, examining the replacement of mooring ropes with vacuum mooring system (safety and productivity benefits)
- Remote Operations and Automatic Train Operation, as I have previously outlined

**RioTinto** **Rio Tinto Centre for Mine Automation**


- Newly established with the Australian Centre of Field Robotics (ACFR) at the University of Sydney.
- The aim of the Centre is to develop and implement the vision of a fully autonomous, remotely operated mine.
- Headed by Prof. Hugh Durrant-Whyte with ~30 staff and 10 Ph.D students
- Up to A\$5M per annum funding, for an initial five years
- The Centre is structured around three main programmes
  - Technology, Research and Training



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In July last year we launched the Rio Tinto Centre for Mine Automation, a \$21 million partnership with the University of Sydney that is being undertaken by the university's Australian Centre of Field Robotics (ACFR).

Its mission is to develop and implement the vision of a fully autonomous, remotely operated mine, focussing on the technology, research and training required to bring the concept into reality. It aims to provide a substantial improvement in safety, predictability, precision and efficiency of mining through the development of automation and remotely operated mining processes.



The slide features the Rio Tinto logo on the left. The main title is "Rio Tinto Centre for Materials and Sensing in Mining". Below the title is a bulleted list of seven points. At the bottom left, it says "Rio Tinto, Global Iron Ore & Steel Forecast Conference - March 2008" and at the bottom right, the number "28".

- Established in March 2008 at Curtin University, Western Australia
- The second Centre established by Rio Tinto as part of its commitment to delivering business value through technology
- The Centre will provide research into materials and sensing to support the aim of highly automated operations
- The Centre will leverage the worldwide contacts of Rio Tinto and Curtin University to establish itself as a hub and on-ramp to achieve global reach.
- Assoc. Prof. Vladimir Golovanevskiy will lead the Centre with a staff of 4 post-doctoral fellows and up to 15 PhD students.
- Up to \$2 million per year will be provided jointly by the Rio Tinto Innovation Centre and Rio Tinto Iron Ore, for an initial period of 5 years.
- Centre will work closely with the Rio Tinto Centre for Mine Automation, established at the University of Sydney in late 2007.

In January, Rio Tinto CEO Tom Albanese declared our pursuit of the “Mine of the Future”. He said Rio Tinto has at least a three-year start on our peers and competitors in the industry, through our focus on automation and ‘intelligent’ technology that was “changing the face of mining”.

We have now taken this initiative a step further, with the launch of a new partnership with Western Australia’s Curtin University that will move us close still towards our vision of “Mining In The New Dimension”.

I am delighted today to announce the establishment here in Perth of the Rio Tinto Centre for Materials and Sensing in Mining.

The Centre will be focussed on establishing global reach in terms of R&D in materials and sensing technologies to support the goal of the automated “mine of the future”.

The Centre will be sponsored over an initial period of five years with Rio Tinto’s Innovation Centre and the Iron Ore division providing a combined funding package of \$10.5 million.

The Rio Tinto Centre for Sensing and Materials in Mining will lead the way for us in developing step-change technology in the open-pit mining industry and underground mining.

Sensing is central to the task of iron ore mining, governing how we go about grade/impurity control, mining sequence, equipment deployment, ore/waste discrimination and processing of ore.

Material engineering and science address how material can be best deployed in our excavation and transport of ore, and how new materials may dramatically change some of the basic mining processes. This can potentially change how we deploy equipment, significantly boost energy efficiency and improve our maintenance performance.

The Centre will connect Rio Tinto to fields of expertise worldwide and provide a valuable point of access and interaction with academic excellence in mining applications. The partnership with Curtin is profoundly practical. This Centre will improve the business of mining. This Centre will improve our business.



I began this presentation outlining the three constants that have coloured our strategy for the past decade:

- Delivering value through profitable and sustainable growth
- Thinking and operating globally, essential to our success
- Government and community commitment and expectations

The key has been to add value wherever possible, using innovation and technology to operate faster, smarter and better than we have before, and more so than our competitors.

We were doing this before last year's conference, we were doing it well before last year's rejected pre-conditional takeover offer from BHP Billiton and we were doing this before the China-led resources boom demonstrated how much value could be built for Western Australia, for the national economy and for our shareholders.

We will continue to create that value.

Thank you.

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