Production and Market Strategies in a Changing Iron Ore World

Peter Toth

Vice President Iron Ore Marketing, Carbon Steel Materials
BHP Billiton Marketing Asia Pty, Ltd, Singapore

28th February 2005
AJM Global Iron Ore and Steel Forecasting Conference,
Perth, Western Australia

Production and Market Strategies in a Changing Iron Ore World

Introduction

Good morning ladies and gentleman. My name is Peter Toth and I am Vice President Iron Ore Marketing with BHP Billiton.

I would like to thank the organisers for the opportunity to talk today about our views on a topic that is very close to our hearts – how the world of iron ore has fundamentally changed over the past few years and how these changes influence the production and marketing strategies of BHP Billiton going forward.

What I would like to cover today is best set out as a matrix. Obviously the focus will be iron ore supply and demand. However, these are both intimately linked to the supply and demand situation of the steel industry. For both of these industries I would like to take a brief look at history and discuss how it has led us to where we are today. From the situation today I would then like to focus on what we see as the future for both industries.

Imbedded in all of this will be the underlying theme of production and marketing strategies for iron ore.

Background – The Early Years

The global and seaborne iron ore industries are intimately linked to the demand for steel. In the distant past the steel industry was fragmented, localised and highly nationalistic. Raw materials such as coking coals and iron ores were sourced locally with very limited amounts traded. What was traded was generally sourced from the surrounding regions.

Following the end of the Second World War a new era of strong steel and hence iron ore demand was seen. This was driven by 2 main factors:-

1. The first phase was the rebuilding and reconstruction of Europe and Japan. This involved major reconstruction of infrastructure, transportation, housing and subsequently industry.

2. The second was driven by the increasing personal consumption of an emerging middle class.

The initial phase of reconstruction saw strong production growth in long products while the increasing domestic consumption was more flat products focused. This period from the 1950 to the early 1970's has been appropriately termed the golden age of the steel industry.

It is important to note that the development of the Japanese steel industry followed a very different model than for Europe and the US, both of which had existing capacity which was added to and expanded. Japan made a conscious decision to build new coastal capacity based on imported raw materials as its domestic resources of coal and iron ores were very limited.

This model was a radical departure from existing industry models and necessitated a reliable source of imported raw materials. Consequently, Japanese investment stimulated the development of the Australian and Brazilian iron ore industries to source the required ores for its rapid steel growth in the 1960's and early 1970's. In this period the iron ore industry was very closely linked to the steel industry with significant cross ownership by steelmakers in iron ore producers and production facilities, for example the joint ventures between European steelmakers and Brazilian pellet production.

In the late 1960's all forecasts had global steel production growth rising essentially continuously, with iron ore demand following. However, the oil shocks of 1973 and 1980 ended this era of prosperity.

The Middle Years – Oil shocks to the emergence of China

Despite the oil shock of 1973 global steel demand continued to grow and the model of using imported higher grade material continued to see the seaborne market increase. Europe had followed Japan's path into consuming more and more imported coking coals and iron ores as domestic supplies were depleted and unable to meet the strong growth for steel.

While the Europeans relied on closer US coking coals and Brazilian iron ores, Asian ironmakers relied on Australian and Canadian coking coals and Australian iron ores. This has seen different ironmaking practices develop.

Asian steelmakers use lump and fine iron ores, with very low percentages of pellets. They have higher phosphorous levels in their raw materials and hence hot metal de-phosphorise. European steelmakers consume fines and pellets, with lower percentages of lump ores. They have lower phosphorous and alumina levels and so do not hot metal dephosphorise.

With the belief that steel production was likely to keep on growing at rates seen in the late 1960's and early 1970's, major expansions of iron ore capacity were planned in both Australia and Brazil. Major boosts to capacity in Western Australia in this period saw the rapid development and expansion of Mt Newman with associated port and rail infrastructure from 1969 and other Australian deposits such as Robe River in 1972. There was a small time lag in responding to demand growth, but the rapid expansion of the Mt Newman deposit match the trend in steel growth. Brazil also saw major developments in the form of further pellet and mine capacity as well as the development of the major Carajas resource in the early 1980's.

One major structural aspect of the iron ore industry has always been the importance of logistics and the costs of ocean freight. Given the large component cost of sea freight in the total landed cost of iron ore, this issue has always been acknowledged as an important force in terms of delivered cost competitiveness, competitive interaction between producers, customers, as well as a major geographic consideration for the development of new resources – influencing the absolute price of iron ore as well as the historical pricing differentials between Atlantic and Pacific suppliers and customers.

As the new capacity of the 70s and 80s came on stream steel production was slowing and the iron ore industry experienced a period of severe over capacity. With hindsight, the industry got its forecasts wrong; however, we were in good company as the steel industry made the same wrong call in terms of its own supply and demand environment.

Subsequently the 20 year period from the mid 1970's to the late 1990's was a difficult time for the steel industry and consequently the iron ore industry. The Mt Newman production figures for this period tell the story. After ramping up quickly to around 30-40 million tonnes during the early 70s, production remain basically flat to the early 1990's, aligned with demand based on flat steel production.

During these difficult years investment was at a premium. In both the steel and iron ore industries capital was scarce and investments were not made into sustaining production capabilities or future capacity growth. Major changes occurred in the steel industry. The industry saw major closures of capacity, rationalisation, privatisation, intense pressure to reduce costs and the need for higher value raw materials, especially iron ores. Consolidation also began with mergers and takeovers in Japan, Europe and USA.

The iron ore industry was not immune to the pressures of globalisation and consolidation with major consolidation occurring here in Australia, Brazil and Canada. Capital was also tight and led to a lack of major investment and high grading in the industry. This lasted throughout the era and put significant pressure on existing reserves by the late 1980's and into the 1990's.

The move to increase the competitiveness of iron ores saw the seaborne industry respond with pisolite ores from the Pilbara, including BHP Billiton's Yandi ore from the early 1990's. These ores met the need for higher value in use materials from the steel industry and demonstrated the "partnership" between iron ore producers and their steel customers, meeting the need for lower alumina levels in sintering. Collaborative research work between both parties on deriving the best of these new types of ores further illustrated the link between consumers and producers.

The highly successful introduction of pisolite ores was followed by the introduction of Marra Mamba ores. These goethite-hematite ores exhibit high value in use with lower levels of silica and alumina than traditional brockman hematites, but as with pisolite ores, require some sophistication in sintering to maximise the full benefits. The introduction of these new ore types clearly demonstrates the evolving symbiotic relationship between steel producers and iron ore suppliers.

The later part of this period saw the emergence of a major force that would change both the steel industry and the iron ore industry, namely the rise of China. China's growth has been spectacular and has had a profound impact on the regional steel industries and on the global iron ore market. China's thirst for iron ore has seen a rise of 60 million tonnes of imported ore in 2004 out of a total rise in the seaborne market of around 80 million tonnes. China's trebling of imports from 70 million tonnes in 2000 to over 208 million tonnes in 2004 has raise major questions and posed significant challenges to the global iron ore industry.

The current era – the China challenge

The spectacular growth in Chinese iron ore demand was met by the inability of domestic iron ore production to respond adequately. The almost 140 million tonne increase in iron ore demand from China in the past 4 years has also exceeded the latent capacity capabilities of the all seaborne iron ore producers.

All major producers are now in the process of rapidly increasing production. BHP Billiton has announced plans to go to 118 million tonnes and is studying further expansions to beyond 150 million tonnes. However, the ability of producers to bring expansions on line quickly is becoming increasingly more difficult. Environmental and community issues require more consideration and are stretching the lead times of projects. The "*need for speed*" in terms of capacity expansions has stretched the abilities of the various components of the process with increased costs and lead times for machinery and equipment, pressures on the availability of skilled personnel; rapidly increasing costs of construction – all of these factors making expansions more complex, longer to implement and significantly more costly.

The effect of all this has been that the major suppliers have not been able to meet the demand challenge set by China in time. One of the consequences of this has seen smaller high cost producers enter the market to meet market demand, with these smaller producers accounting for 9% of Chinese imports.

2004 saw a dramatic increase in Indian iron ore exports to China to see them become the second largest supplier after Australia. The most surprising revelation of the import statistics was the dramatic increase in the market share of small producing countries who cumulatively supplied 16 million tonnes in 2004. The geographical diversity of these suppliers, including

producers in Venezuela, Kazakhstan, Sweden, Vietnam and Mexico, shows that steel producers are scouring the world for sources of iron ore.

The very strong Chinese demand for iron ore saw domestic producers increase production during 2004. Our information indicates that run-of-mine production rose by around 19% to 310 million tonnes and that the number of producers continues to expand. It is well recognised that the majority of Chinese run of mine iron ore is of significantly lower quality than the traded seaborne products. This means that on comparable terms, seaborne iron ore made up two thirds of the increased iron unit consumption in 2004. We see this trend continuing in the future.

The emergence of the large and liquid Chinese iron ore spot market is a well known fact and is the direct consequence of the supply and demand factors I described just now. The Chinese spot market has traded at significant premiums above current long term contract prices during 2004.

It is somewhat ironic to note that the market today benefits higher cost small suppliers who use the spot market over long term suppliers who supply reliably and with consistent quality on negotiated long term contracts.

China has also had further profound effects on the supply and demand balance of freight capacity and on freight rates. The demand for seaborne iron ore and to a lesser extent thermal and coking coal have seen freight rates for large bulk carriers reach record levels, far in excess of anything seen in the past.

The overall effect of this increase in freight costs has been the quadrupling of the historical differential between Australian and Brazilian ores to Asia. This has seen an unsustainable difference arise in the delivered cost of iron ores between Australia and Brazil. It does not make sense for this differential to continue to exist without an adjustment to the fob price of BHP Billiton's ores to reflect landed cost competitiveness. The benefit of buying ore from Australia needs to be reflected in a fair and equitable way in the product's price.

Looking back in hindsight the iron ore industry was limited in its ability to respond to the China story because of four main reasons.

- The first is that it was not recognised and believed. After a difficult decade in the industry we all had reservations about accepting such a strong case for rapid growth. The Japan story happened too long in the past. The Chinese market has historically been intransparent and difficult to predict.
- The second was the lack of investment within the industry during the previous decades.
- Thirdly, the simple speed and magnitude of the growth was unprecedented. No previous example has seen the market grow by over 120 million tonnes in 2 years – this is close to the total imports of Japan!
- Finally, the lead time to market response was long. The industry was able to quickly increase output to the extent of its existing latent capacity – but this was nowhere near enough to meet the China demand challenge. The shear magnitude of the volumes required to meet the full demand mean that the capital amounts to be invested are huge and the time taken to bring the raised tonnages onto the market are long.

To summarise where we are today.

- China has changed the global iron ore industry posing supply challenges for major iron ore producers, who are struggling to meet booming demand.
- The tight iron ore market has raised concerns about the availability of supply, in the near to medium term, which is seeing major producers sprinting to increase capacity and small producers selling at very high prices in a strong, growing and liquid spot market.
- The record seaborne trade and freight market has created an unsustainable landed cost differential between Australian and Brazilian products.

The Future - China and beyond

So what does the future hold for the steel and iron ore industries? Predicting the future is notoriously difficult and the past is littered with incorrect forecasts. I have given the example of the early 1970's, but it is possible by analysing the fundamentals and considering the major drivers to gain some insights into the possible future.

Most people now believe that China's growth will slow from the incredible rates that it has been growing at to a more sustainable level. We agree with that view but the fundamentals for continued strong steel demand in China are sound. Major events such as the Olympics, the Shanghai EXPO, he continued trend of urbanisation, the continued development of the middle class, growing car and home ownership and continued high levels of foreign direct investment all driving steel consumption. Given the current production base of around 300 million tonnes for this year, even more moderate steel growth percentages will equate to big volume increases year-on-year, with associated continued strong demand for iron ore.

The future holds other opportunities for growth in steel demand apart from China. India, another large country of over 1 billion people has a much lower steel intensity, ~35 kg/capita compared to China's 250kg/capita and is showing early signs of entering a strong growth phase and presenting significant demand side opportunities. Whilst it is too early to say clearly that India will become another China, and there are many differences between the two countries not to mention a range of major issues to be overcome, the demand side signs are encouraging.

Other areas worth a brief mention in this context are Brazil, Russia and SE Asia. Close to our backyard, we hear of a number of exciting projects in Indonesia, Malaysia, Thailand to meet this buoyant steel demand, that are currently constrained by their inability to source raw materials. As additional raw materials supply enters the market over the next few years I am sure that we are going to see some of these steel projects proceed.

All these regions and countries are exhibiting signs of strong steel growth in the next 5 years; all are likely to be based on the blast furnace, as the strong pick up in global steel growth has seen the global scrap pool stretched and become in short supply. As scrap comes from a

reservoir of old steel, the lower production in the past 20 years has left a major shortage of scrap which has seen the blast furnace fed by iron ore of various forms become an increasing important steelmaking route. This is especially true for China and India, countries very short of scrap.

The global iron ore industry is working overtime to expand to meet the growing demand. Whilst China has a large domestic iron ore industry, the low quality and limited reserves mean that the future growth will be met by imported ores. India as a group was largely responsible for being able to fill the current supply gap. India's exports in CY2004 appear to have reached over 70 million tonnes and they are now the second largest supplier to China.

I have talked about India already from a demand perspective. India of course is also a major supplier with vast major iron ore reserves. Its proposed rapid expansion of steel production raises important questions as to whether the strong recent growth in Indian iron ore exports can and/or will be sustained. Exports have doubled since 2000 and increased by almost 43% in 2004 with a large proportion of this increase going to the Chinese spot market. Indeed questions are being raised about not only the potential to maintain growth but whether the infrastructure and most recently environmental challenges will reduce seaborne exports and re-direct them to meet domestic demand. And of course there is the government which is keeping a close eye on domestic iron ore reserves and exports in the context of national interests.

Another major characteristic of today's market is the unprecedented profitability of the steel industry. For example, Arcelor announced a net profit of 2.3 billion euros, around US$3 billion, and the profitability of all steelmakers have seen a very strong recovery on the back of strong steel prices. In fact I could have used any other major global steelmaker as an example. The outlook for steel prices is increasing look more positive for 2005 which bodes well for continued excellent profitability for our customers.

Let me address an issue that is currently getting a lot of attention – the interaction between raw material and steel prices. But before I discuss in more details let's agree on the sequence of events: strong steel demand drives strong steel production, which, faced with limited

capacity to respond, leads to increasing steel prices. Strong steel demand drives strong iron ore demand which faced with short supply drives iron ore prices.

Over the past years the price of steel has risen from US$290/tonne to US$580/tonne for European export HRC and from US$290/tonne to US$550/tonne for Japanese export HRC. On an equivalent basis the raw materials have increased by US$75/tonne of steel and in fact the current increase in coking coal prices of 120% is equivalent to US$40 on a tonne of steel, an iron ore price increase of 71.5% is equivalent to US$20 on a tonne of steel. The steel price is driven by the steel market's supply and demand situation. The steelmaking raw material price reflects their own supply and demand characteristics. But it is clear that it is not the increase in raw materials that is causing the inflation of steel prices, but rather increased demand in steel itself.

The publicly announced large expansions from all major iron ore exporters will see very significant new long term sustainable capacity enter the market in the next 2-5 years. The combined quantum of these projects is unprecedented at any time in this industry's history. But, even so, they do not appear to be coming on quickly enough to rebalance the market for at least a couple of years yet.

As I noted earlier, these new tonnes are being brought on at a significantly higher capital expenditure levels than previously. To realise anything less than the true market price of iron ore would be a sub-optimal outcome from a pure investment point of view.

BHP Billion is striving to supply high quality ore, reliably and consistently to our customers. We are seeking to correct the mistake made in underestimating China and we strive to work very closely together with our customers to ensure that we not only bring supply and demand back in balance but that we plan ahead in closer cooperation to ensure that our mutual future needs are understood and planned much better.

BHP Billiton iron ore strategies for the New World

Lastly I would not do justice to my marketing profession if I did not blow my BHP Billiton trumpet and talk about our own production and marketing strategies to meet the growing iron ore demands of the steel industry.

Foremost we are spending a lot of money to increase production. As I have mentioned we have approved expansion to 118 million tonnes in Western Australia and studying to move beyond 150 million tonnes. We are constantly focusing on our customers' needs, reviewing our products so that we can continue to meet the market's requirements. One component of meeting our customers' needs is ensuring that we remain a reliable supplier for the long term. This entails reviewing our potential resource base and determining ways to introduce products that maximise our economically viable reserves.

On the marketing side we are maturing our marketing model based around a 'hub and spoke' design. Our regional offices or 'spokes' are our key customer touch points and we believe that a local presence is always preferred by customers. Commodity coordination and strategy are centralised in our 'hub' in Singapore. This allows us to ensure that we maintain a consistent focus on the entire market and ensure that the individual regional strategies make sense from a total book perspective.

We have always had a big focus on technical marketing and research and this will continue and be strengthened in the future. We believe that our customers achieve enhanced production and quality results through their technical collaborations with our Newcastle Technical Centre (NTC). Our technical marketing capability in the key China market has been continually upgraded with local recruits from the local steel industry to better tailor solutions to our customers, ensuring that they achieve the best technical usage of our iron ore, metallurgical coal and manganese products. The very successful adoption of MAC^{TM} ore at levels up to 15% in many sinter blends is testament to the cooperation between research at NTC, Technical marketers and customer technical groups.

NTC is globally recognised as a leading centre for raw materials research. In the area of iron ore sintering it is arguably one of the leading centres in the forefront of work on sintering and

utilisation studies on *pisolities* and *marra mamba* ores, as well as studies on fundamental iron ore reactions.

In addition to our extensive Shanghai marketing structure and in order to further develop and support the China market we have established a domestic Chinese sales mechanism with two aims in mind. One is to allow us to service smaller steel mills in local currency who cannot buy cape size cargoes or do not have access to foreign currency. Secondly is to allow us to participate in the Chinese spot market to understand its dynamics, its participants and its liquidity. This venture enables us to respond better to short term market fluctuations and allows us to market our high quality products and services to smaller customers who might otherwise be dependent on smaller less reliable spot producers.

Freight plays an important role in the delivery of iron ore. BHP Billiton has a dedicated freight team in The Hague office who are able to support the Singapore Hub and Regional offices, with the most up to date service available. Combining the freight knowledge from our suite of products from the wider BHP Billiton group gives significant benefits in market understanding and direction, allowing us to maximise delivery and minimise cost to our customers.

Finally we also have a highly professional market intelligence and analysis team. This global team can combine the benefits of industry and market analysis, including detailed supply and demand, industry trends and future forecasting, supporting both the front line marketing teams and the key strategic decision making in Singapore. The group has been a key feature of our improved industry and market understanding and should enable us to predict more successfully market movements so that we will not find ourselves trying to catch up as we are at present.

Summary

We live in exiting and challenging iron ore times. The outlook for steel demand looks to remain robust and this will allow both steel and iron ore producers to enjoy a period of continued profitability.

The iron ore industry is currently undergoing a structural change. The challenge of meeting the demands of the steel industry are getting more complex, expensive and require a longer

lead time. The increasing costs of investment make achieving the historical investment returns more challenging.

This ‘new world’ will require an even closer level of cooperation between the steel industry and the iron ore industry, to better understand each other’s needs and limitations, future plans and forecasts.

BHP Billiton is fully committed to learning from the past, working with our customers and we are striving to expand as rapidly and cost effectively as possible to meet our customers’ requirements and remain their supplier of choice for iron ore.

Thank you very much for your attention.