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Steel companies in an era of consolidation

By Dirk Claessens and Allan Henderson

The global steel industry, dormant for years, has awakened with a new vitality. A wave of consolidation is sweeping the industry, but other industrywide changes are also unfolding, such as a shift away from developed countries, rising production costs and globalization. Each steel company should revisit its market position and aim for one of strength, such as “Market Share Grabber,” “Niche Player” or “Value Chain Stretcher.” Failing to achieve one of those, a steelmaker could fall into a weak position, such as “Underdog,” “Struggler” or “Takeover Target.”

After a prolonged slump, steel returns to vitality

Some of the most visible headlines about the steel industry’s recent revitalization have been in the arena of mergers and acquisitions. For example, the US$23 billion merger of Arcelor and Mittal in late 2006 combined the world’s two largest steel companies and created the industry’s first global giant. This combined company now accounts for 10 percent of world steel output – about three times that of its nearest competitor, Nippon Steel. Another such transaction was the late-2006 acquisition of Corus, the number 9 steelmaker, by Tata, the world’s 56th largest. Corus is a power in the high-end European steel market, while Tata is a low-cost producer from India. The consolidated company will almost certainly look to leverage both of those strengths.

Consolidation, however, is not the only thing that’s happening in the steel industry. The entire industry dynamic has been transformed over the past five years. Profits have increased, production is up and demand is growing. At the same time, though, raw material costs are rising, the rate of globalization is not particularly strong and China alone accounts for two-thirds of the increase in world demand.

• Profits – Our analysis of the latest figures show 21 percent of top-producing steel companies have operating profit margins of 20 percent or more, compared with only 4 percent of those companies in 2001. As well, the percentage of top-producing companies enjoying an operating profit margin of 10 percent or more has risen from around 35 percent in 2001 to nearly 60 percent.
• **Production** – Steel production has risen dramatically, growing by 46 percent from 2001 to 2006, a compound annual growth rate (CAGR) of around 8 percent (see Figure 1).  

![Figure 1: Global steel production in million metric tons.](source)

- **Demand** – World steel demand is projected to grow at a CAGR of 4.9 percent from 2007 to 2010.
- **Raw material costs** – The cost of raw materials is rising fast: iron ore is up 100 percent since 2004, and coking coal is up 90 percent. This leads steelmakers to try to lock up raw materials sources through long-term contracts, supplier acquisition or partnerships.

• **Globalization** – Globalization is in its infancy in the steel industry, with about 85 percent of production still used in the region in which it is produced. However, a few companies have begun transitioning to a more global way of doing business. One approach is for a company to produce crude steel in a low-cost region and sell it in a higher-value market. Another approach is to produce a semi-finished product in one region and finish it elsewhere. Of the top 40 steel companies, only 8 have “very strong” or “strong” production capabilities across multiple regions.

- **China**. The quick rise in steel demand in China has been the engine driving the global revitalization of the steel industry. Between 2000 and 2006, increases in China accounted for two-thirds of the increase in worldwide steel demand. China’s crude steel production has doubled – from 17 percent of the world’s production in 2001 to 34 percent in 2006 – while China’s percentage of total usage increased from 19 percent in 2001 to 38 percent. While industries in other Asian countries, such as India, are also growing, the steel industry outside of Asia has posted only small gains or losses over the past five years.

Although the steel industry is traditionally prone to boom or bust cycles, reflected in sharply fluctuating prices and steep downturns, we believe that as long as demand in China and India stays strong, the global industry will likely enjoy a prolonged period of stability and the opportunity for strong financial performance.
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The new dynamics of steel
Sharp contrasts are apparent when comparing the steel industry of today with that of just a few years ago. While in its declining period, the steel industry was almost exclusively focused on regionally based customers and competition – without much need for global strategies. As the industry begins to see more global competition and global customers, however, there is an increasing need for global strategies.

Manufacturing focus has shifted as well. The industry no longer looks to maintaining production levels as a key indicator, but is concerned more about maintaining business profits.

Severe downturns were expected in the past, and government protection was commonplace. Steel companies were burdened with outmoded technology, high labor costs and other high fixed costs. Today, however, shallower downturns are anticipated, government protection is less of an issue and there is more focus on new technology, lower-cost labor and reduced fixed costs.

Positioning for today’s steel industry
The standard practice for positioning companies does not help today’s steel company frame its actions to take advantage of the industry’s changed dynamics. Instead of aiming for a traditional role as a commodity player or low-cost producer, we believe the steelmaker today should aim for one of three strong positions: “Market Share Grabber,” “Value Chain Stretcher” or “Niche Player.” The positions to avoid are “Struggler,” “Underdog” and “Takeover Target” (see Figure 2).

FIGURE 2.
A different way of looking at strategic positioning can help a company take better advantage of the new dynamics of today’s steel industry.

Source: IBM Institute for Business Value.
As Figure 3 shows, our analysis of the top 80 steelmakers indicates that about 40 percent are in strong positions today.

**FIGURE 3.**
About 60 percent of the 80 top-producing steelmakers are in weak positions today.

![Circle chart showing the distribution of positions among steelmakers.](chart)


**Consolidation in today’s steel industry**

A significant number of major consolidations have occurred among the top 40 steel companies since 2002, as Figure 4 shows.

**FIGURE 4.**
Major steel consolidations since 2002. Many other minor steel consolidations also occurred.

![Timeline chart showing key consolidations and acquisitions.](chart)

Source: IBM Institute for Business Value analysis of public news sources.

The steel industry remains fragmented today, but we expect further consolidation to concentrate as much as 35 percent of worldwide production within the top ten steel companies in the next five years.

Despite a recent rash of consolidations, the steel industry remains very fragmented. The top 30 companies control only about 45 percent of the market. This continued fragmentation encourages overproduction and fluctuations in prices—and sometimes leads to boom or bust cycles. From 2001 to 2005, the amount of production concentrated in the top five companies increased only slightly, from 16 percent to 20 percent (see Figure 5). By comparison, the iron-ore industry (a key steel supplier) and the automotive industry (a key steel customer) are much more consolidated. The top three iron-ore companies control 45 percent of world production, and the top three automotive companies control 35 percent. By contrast, the top three steelmakers control only about 15 percent.

Our analysis suggests that consolidation in top steel companies will continue, concentrating as much as 35 percent of steel production in the top ten companies within the next
Within five years, the top three companies are likely to produce nearly as much steel as the top ten companies do today.

We believe that consolidation among the top 30 to 40 steel companies will be driven by strategic fits between companies, rather than financially centered deals. A company could be a good strategic fit for a merger if it has:

- Attractive access to raw materials
- Production capabilities in complementary regions or low-cost production
- Proven success in complementary markets, including complementary product lines and customer relationships in selected regions
- New technologies or patented products
- A global supply chain that is already succeeding — or other global strategies that are already bearing fruit.

Such further consolidation should help stabilize the industry by providing for less severe business cycle downturns, reduced flooding of the market during downturns and more stable prices and costs. Many of the same benefits of consolidation can be derived from joint ventures or other partnerships between companies. However, long-term partnerships are hard to maintain.

The steel industry can look to the oil industry for the impact of consolidation. The global oil industry experienced an intense period of major consolidation from 1998-2002, during which time “supermajor” oil companies were created — including Exxon-Mobil, BP, Chevron, Total and Conoco-Phillips. A later merger created Royal Dutch Shell. These companies remain among the top ten oil companies today. Like steel, the oil industry is an asset intensive industry, needing large plants and high levels of capital investment. Also like steel, oil’s market demand is shifting to Asia, especially China and India. Oil also has a history of boom/bust cycles, although today oil profits are growing to record highs with an upswing part of the cycle. Oil also operates as a global industry. Our analysis of top oil companies indicates that newly consolidated companies need to be rapidly focused and streamlined — by cutting costs (eliminating duplicate operations, outsourcing non-core activities) and using up-to-date technologies to implement common processes.
Consolidation in China
Of particular interest is the issue of consolidation in China. Currently, that nation has more than 800 steel producers, many of which are under government control. However, the Chinese government has recently changed its policy toward steelmakers. Consolidation is now government policy, driven by the need to keep supply from outpacing demand and to meet environmental concerns. According to its new policy, China aims to have two major steel companies by 2010, each with a capacity of 30 million metric tons, and a handful of smaller companies. Also China plans for its ten leading steel plants to account for half of China’s national production by 2010, and that the top ten plants in China will account for 75 percent of all domestic production by 2020.

Consolidation continues in the steel industry
Two recent acquisitions are indicative of the consolidation dynamic within the steel industry:

Evraz Group, Russia’s largest steelmaker, acquired Oregon Steel Mills in 2007 in a US $2.3 billion takeover, one of largest investments in the United States by a Russian company. This acquisition, unlike the horizontal integrations that formed Arcelor Mittal, is a vertical integration move that gives Evraz access to high value-added product mix and higher margin markets. Evraz gains wider access to the North American steel market and reduces reliance on more volatile markets in Asia and the former Soviet Union.

BaoSteel, China’s largest steel maker, is acquiring an 85-percent share of Bayi, a steelmaker in northwest China, for US$384 million. This is the largest merger to date in the Chinese steel industry, and it improves Baosteel’s presence in Northwest China. Bayi commands about 70 percent of the market share in Xinjiang province that borders Tibet. Bayi also has close market ties to Russia, Kazakhstan and other central Asian countries. This may be part of Baosteel’s strategy to strengthen its dominant position in China’s domestic steel industry via mergers and acquisitions. But Baosteel’s strategy is also encouraged by China’s recent change in policy to encourage more steel consolidation.

Strong and weak positions for steel companies
We believe steel companies should seize the strong positioning opportunities before them in today’s new market environment. We believe the key positions of strength to be:

• **Market Share Grabber** – This company looks to expand market share rapidly, often by buying or merging with other steel companies.

• **Niche player** – This is a firm that captures market share with specialized niche products or services.

• **Value Chain Stretcher** – This company expands its business into higher value parts of the steel value chain.

Correspondingly, three weak positions steel makers should seek to avoid are:

• **Underdog** – This firm is doing okay, but is not getting ahead of its competition.

• **Struggler** – This company strains to stay in business against other competitors.

• **Takeover Target** – This firm is a candidate for takeover (hostile or friendly) by another steel company.
A company can shift quickly from one position to the next, usually, but not always, as a result of its own actions. For example, a Value Chain Stretcher may be working confidently toward its business goals when it finds itself to be a strategic fit for a Market Share Grabber.

The next few sections describe in detail the three strong positions for steel companies today.

**The strong Market Share Grabber position**

A Market Share Grabber looks to expand its market share quickly, often via mergers and acquisitions. Such companies may be looking to grow market share for greater influence in the industry, or to quickly improve the company balance sheet.

The typical Market Share Grabber is already a reasonably sized company, with a prior history of M&A activity, or even M&A-based origins. Such a company most likely has its own business under control, including: good stock value, balanced product portfolio, manufacturing capabilities in the fastest growing geographies (China, India and South America) and good access to raw materials.

**Success path**. The path to success for a Market Share Grabber is to leverage its size and economies of scale. It should plan to grow to the 50 to 100 million metric ton per year production range to be considered a major player in the steel industry; otherwise it should aim at vertical integration or new high-value markets. And it needs to create cross-regional and global strategies for access to (or capture of) inexpensive raw materials in multiple regions, low-cost production and access to high-margin markets in multiple regions. And to keep growing, it needs to find strategic fits for additional takeovers – aiming for balance in complementary products, customers/markets, regions and supply chain. As well, it should also look for new, large and global customers.

Other advantages of size for the Market Share Grabber position include the ability to build a true global supply chain, which makes a better fit with global customers, builds more options for weathering downturns or for shifting resources, improves options for load balancing globally and allows for the tuning of a product portfolio globally and adjustment of product mixes for local requirements.

**Challenges**. However, a Market Share Grabber also faces challenges, including achieving the expected synergies from the combined companies, creating value proposition for the shareholders of the newly combined firm and overcoming cultural differences, especially deeply embedded traditions in some companies where the engineers in the mills are the true company powers. It also is challenged by optimizing capacity, since it is difficult to move steel mills to new locations.

The management of the new company needs to quickly balance the product portfolio and market segments, especially across regions. And it should quickly integrate global processes and operations in order to drive out duplication, streamline processes and reduce costs, strengthen access to raw materials, and establish and tune an efficient global supply/value chain.

Also, a Market Share Grabber needs to generate synergistic savings fast enough and large enough or risk becoming a “destroyer” of value rather than a creator, in which case it could become a takeover target itself.
There are also well-known M&A risks to face, such as the fact that 70 percent of mergers fail to reach their anticipated value.\textsuperscript{34}

Technologies and business processes. To meet those challenges and risks, we believe a Market Share Grabber should focus on several key technologies and business processes, including:

- **Supply chain** – Optimization and integration on a global basis
- **Logistics** – Reducing the costs of moving raw materials, semi-finished goods and finished goods
- **Procurement** – Lessening the costs of raw materials.

As the Market Share Grabber looks for economies between the consolidated companies, it needs to standardize global operations and look to outsourcing to reduce overhead duplication and costs.

The strong Niche Player position

A Niche Player produces a specialized and differentiated product for which it can charge a premium price. Such a company is most likely a technology leader, with leading-edge capabilities to make specialized products. It knows how to protect its leading-edge technology via patents and has strong capabilities in process research and product development. Or a Niche Player might be a service leader instead, with such distinguishing capabilities as very short order-to-delivery time.

Success. The path to success for a Niche Player is to develop a specialized product, service or business model that the competition can’t easily duplicate. Because it doesn’t deal in commodity products or services, a Niche Player can typically charge a premium price.

The Niche Player should keep investing in the business to stay at the leading edge and keep good relationships with its relatively small customer set, as well as good supplier and labor relationships. In fact, one way to develop new products is to collaborate with key suppliers and customers. A successful Niche Player is good at managing and controlling product quality, managing demand and supply and managing price. It also has developed strong, close relationships with customers in its niche markets.

Being a Niche Player can also help insulate the company from market fluctuations that don’t affect its niche market. And a Niche Player can often stay off the M&A radar screen of Market Share Grabbers.

Challenges. A Niche Player faces the challenge of staying at the leading edge of new product technologies. It needs to be able to deal with the shortening “premium-to-commodity cycle” in which specialized products become commodities faster and faster. This may require a continuing commitment to research and development in order to stay ahead. A Niche Player also needs to stay ahead of competitors, especially when competing on service. It needs to find new applications and new customers for its specialized products, if it is to keep growing, and needs to be adept at demand, supply and price management for its product line.

Technologies and business processes. To meet its challenges, a Niche Player needs to focus on several key technologies and business processes:
The “Value Chain Stretcher” should work to develop new, high-value products – while focusing on effective technology, quality and customer service management.

- Product development (PLM) technology that enables collaboration in product design and planning
- Processes for introducing new product and services faster
- Process efficiency for product manufacturing (automation, intelligent manufacturing, etc.)
- Customer service, including order handling and product traceability (batch of manufacture, reliability and field failures)
- Demand management, supply management and price management.

Niche Player: Carpenter Technology

Carpenter Technology is a manufacturer, fabricator and distributor of specialty metals and engineered products. The company operates in business units, which include Specialty Alloys Operations, Dynamet, Carpenter Powder Products and Engineered Products.

“The firm processes basic raw materials, such as nickel, titanium, chromium, iron scrap and other metal alloying elements, via melting, hot-forming and cold-working facilities to produce finished products: billet, bar, rod, wire, narrow strip, special shapes and hollow forms in many sizes and finishes. Carpenter also produces certain metal powders and fabricated metal products. In addition, ceramic products are produced from various raw materials using molding, heating and other processes.”

The company stock price is up 250 percent since 2005, and over 400 percent since 2000.

The strong Value Chain Stretcher position

A Value Chain Stretcher is a company that expands (stretches downstream) into products of higher value that are closer to end customers (see Figure 6).

A Value Chain Stretcher generally has the technical and organizational ability to manufacture higher value-add products, has its business under control, is running low-cost production and has good access to raw materials. As it stretches its product line closer to the end customer, the company must be able to manage flexible product portfolios and manufacturing capabilities. The company also needs to be able to use business and alliance partners to add some of the additional product value, and find new customers for the new higher-value products.

As Figure 6 shows, with stretch scenario number one, a company can provide higher-value products as opposed to generic intermediates – such as color-coated products for applications in low-cost housing and other aesthetic structural applications, and deep marine products, such as rust-free/rust-resistant steel for applications in oil and gas exploration, marine engineering and commercial fishing.

With stretch scenario number two, a company can provide end-customer products, such as finished subcomponents for the automotive, construction or medical industries – or cut, bent or shaped steel for engineering customers. As well, the company can produce lot sizes as small as two tons.
**Success.** The path to success for a Value Chain Stretcher is to develop new “value-add” products or services that can beat the competition. These are usually still related to the company’s current products, but higher up on the value chain and for which premium pricing applies. Success will entail establishing new relationships with different segments of customers, the ability to collaborate with supply chain partners and establishing new customer relationships.

**Technologies and business processes.** A Value Chain Stretcher needs to focus on several key technologies and business processes:
- Supply chain collaboration
- Product and service development
- Faster, cheaper, more reliable introduction of new products and services
- Technology and quality management, including customer service and order handling
- Demand management, supply management and price management.

**Value Chain Stretcher: ThyssenKrupp**
While ThyssenKrupp is the tenth largest steel company in the world, producing over 18 million metric tons of steel in 2005, it is more than a steelmaker. ThyssenKrupp has stretched closer to the end customer for a sizable part of its business. The company plans to generate 40 percent of its €50 billion in sales from services. Another of its downstream businesses is supplying automotive parts, including steering systems, engine components, axles and chassis systems for a wide variety of car models worldwide. The company also manufacturers elevators.
Weak positions for steel companies

Weak positions to avoid for steelmakers include “Underdog,” “Struggler” and “Takeover Target.”

An Underdog is a company performing acceptably within its business segment, but not moving ahead of the competition. Its business is viable in the short term, but the long-term outlook is loss of share and, perhaps, a slow, downward business spiral. Indicators of an Underdog include:

- Makes commodity products – or higher-value products that are not segment leaders
- Has uncertain or costly access to raw materials
- Has high manufacturing costs
- Might have intermittent financial distress, managerial control issues, labor issues and environmental issues.

An Underdog has two actions it can take that might improve its situation. It can cut costs for short-term relief or it can embark upon what might be a more permanent solution by gaining a leadership position in one or more market segments, thereby growing its market share and protecting its revenue stream.

A Struggler is already experiencing financial distress, managerial control issues, labor issues, and/or environmental issues, and, with no change, may soon be going out of business. A Struggler sells commodity products or higher-value products that are not segment leaders, has uncertain or costly access to raw materials and has high manufacturing costs. A Struggler can attempt to turn itself around by:

- Focusing on products where it can lead in a target market segment
- Moving toward premium products and away from commodity products
- Cutting costs (a short-term solution)
- Moving to niche markets – if the company has the capability to innovate.

If a Struggler cannot get its business in balance from one of those actions, it may find it difficult to remain in business.

A Takeover Target is a company that a Market Share Grabber is looking to acquire, often because it is a strategic fit for the acquiring company. It might have good access to raw materials or low-cost manufacturing capability. Its business is probably doing well enough, with moderate overhead costs, and it is probably using advanced or middle-level technologies. Assuming that it doesn’t want to be taken over, a steelmaker has several courses of action available:

- Turn the tables and seek to take over the prospective acquiring company
- Look to a “white knight” for protection
- Fight the takeover attempt
- Acquiesce.

A company can also cross-invest in other steel companies to form an interlocked financial arrangement and forestall some hostile takeovers; however, that is not a strong defense against a determined Market Share Grabber.
Of course friendly takeovers also happen. A company can sell out to another company for a variety of business reasons.

**Nucor acquires Harris Steel in friendly takeover**

U.S. steelmaker Nucor purchased 96 percent of Canada's Harris Steel in 2007 for $US1 billion in a friendly takeover. The two companies already had a partnership dating to 2004, when Nucor paid US$21 million to acquire a 50-percent stake in Harris Steel's 11 reinforcing steel products operations in the United States. The takeover helps Nucor improve its geographical reach and its growth opportunities. Nucor expects the major markets for Harris' products, which include highways, tunnels and stadiums, to be buffered from downturns. Nucor also expects huge demand from projects such as Canada's oil sands production, highway spending in the United States and the rebuilding of the U.S. Gulf Coast.

**Moving toward success**

The steel industry is in transition, recovering from a period of decline and transforming into a vital, global industry. Key forces propelling today’s steel industry include consolidation, globalization, the importance of China, India, and other developing countries, and rising raw materials and production costs.

A steelmaker today needs to position itself to succeed in this changing environment. The way to do that is to first figure out where the company is right now. Then move into a strong position that will enable success in today’s changing industry dynamics, becoming a Market Share Grabber, a Value Chain Stretcher or a Niche Player. These are the questions to ask:

- What are the company’s strategic goals?
- What strong position is the right match with those goals?
- Where does the company stand right now?
- What is the gap to getting into a strong position?
- What actions can close the gap?

By assessing these questions and creating appropriate actions, steelmakers can position themselves to assume one of the strong positions in today’s revitalized industry.

Failing to achieve a strong position in today's changing steel industry could drop a steelmaker into one of the weak positions – such as Underdog, Struggler or Takeover Target, positions we believe are not well-suited for long-term success.
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References

5. IBM Institute for Business Value financial analyses were based on Thomson ONE Banker financial data for the top 30 steel companies (listed by the International Iron and Steel Institute) in 2001, 2003, 2005.
6. Ibid.
8. Ibid.
11. IBM Institute for Business Value analysis of regional production capabilities for the 40 top-producing steel companies as stated in company Web sites and annual reports. Those with strong cross-regional capabilities include: Arcelor-Mittal, United States Steel Corporation, Tata Steel, Evraz, Gerdau S.A., Severstal, BHP Billiton and voestalpine AG.
13. Ibid.
14. Ibid.
15. Ibid.
16. Ibid.
21. Ibid.


24 IBM Institute for Business Value financial analyses based on Thomson ONE Banker financial data for the top ten oil companies from “Platts Releases 2006 Top 250 Global Energy Companies List” (http://www.platts.com/top250/index.xml) and information from those top companies’ Web sites and annual reports.


26 Ibid.

27 Ibid.


29 Ibid.


31 Ibid.

32 Ibid.

33 Ibid.


