

# Mexican steel – a roller coaster ride

The challenge of cheap imports from Asia has spurred Mexico to change and adapt to new market conditions by producing higher quality value-added products, particularly for export to its North American neighbours.

BY M PERALTA & A QUINTERO\*



Source: ILFA (Instituto Latino Americano del Hierro y el Acero)

The cyclical nature of the global steel industry has been obvious over the past few years with extreme highs and lows in terms of profits, margins, production and price volatility. 2004, a record year in global production, saw just over 1bn t produced, backed by strong demand creating an inelastic relationship in the market and high profit margins all around. With demand and profits soaring throughout the year, production rates increased to a record high at the start of 2005; then steel prices eased as demand for steel decelerated, mostly due to a dip in worldwide industrial production. Margins were further diminished due to the increase of negotiated contractual price averages of raw materials, such as coking coal and iron ore, 72.6% and 58.3% respectively. At the beginning of this year, most forecasts for the industry were moderate, indicating 2006 would be comparable to 2005 with little variance.

## TRADE ISSUES

The role of China has inevitably had some effect on regional steel markets,

particularly in dictating competitor reaction and strategic planning. Prices in the NAFTA region (US, Canada & Mexico) are much higher than the rest of the world and values in Europe are also above those in Asia. Until recently, the steel companies' considerable profits had prevented protectionist action or dumping claims, since they were unable to argue they had suffered injury – the key criteria needed to prove dumping under WTO rules. Now, however, with mill profits falling and global capacity increasing, there are arguments and requests for clarity on 'dumped' or 'subsidised' imports. Harbor Intelligence, a consulting firm specialising in analysis, strategy and intelligence services, provides information to the government and leading steel companies in Mexico. Asked about Asia's effect on the region, Jorge Vazquez, general director said, "I believe Mexico is a target for steel imports, especially from Asia, due to price differences. We have a challenge ahead of us because legislation needs to be put in place to better protect

the national industry; I think it is still vulnerable. The United States is very active in the area of anti-dumping, so we should learn from them. I feel the sector will be exposed to import dumping until the government works on these issues. Mexican companies are now producing higher quality products. If Mexican energy reforms are achieved, this would reduce the extraordinarily high cost of energy, so that companies could be better prepared to compete, or even export Mexican steel products".

## ADDING VALUE

Mexico, traditionally known as a low labour-cost manufacturing centre serving the US market, has been making a move towards producing higher value-added goods oriented to high specification, technology and quality products to maintain industrial growth. The US is Mexico's top trading partner by far: about 88% of Mexico's exports go to the US, while 56% of its imports come from US sources. At the same time, 14% of US exports go to Mexico and 11% of imports come across the Rio Grande. Perhaps

\*Global Business Reports

more importantly, US-Mexico trade has grown exponentially since the signing of NAFTA (the North American Free Trade Agreement), growing from \$89.5bn in 1993 to \$275.3bn in 2004. Taking that into consideration, it is no wonder that Mexican exporters and importers have feared China's entry into the WTO. All industrial sectors understand that in a globalised environment, low cost labour is no longer a key competitive advantage as they face direct competition with China and India for lower quality goods and basic commodities, including steel.

However, Mexican companies are moving with the 'value-added' tide to produce higher quality and sophisticated specialised steel to address the speciality markets. Through this strategy, companies are revitalising profits by opening new markets, filling niches and upgrading the level of sophistication and technology in the Mexican steel sector.

One example is Mexico's first and oldest foundry, Fundiciones Altairu established in 1957. Altairu attributes its long-standing success to moving with the times and not resisting inevitable change. Over the last seven years or so, the company has been pushing towards technology and high-end quality products, having identified the influx of carbon steel and low quality specification goods from Asia. Jesús A Ispizua Gil, owner and executive director, outlined how his company has taken advantage of the changing times: "Instead of looking at competition as something negative, we look at it as an opportunity."

"What Mexico imports from China

are low quality products with roughly a 10% material rejection rate. We have moved to material that is worth ten times more, so a 10% rejection rate is impermissible for us. To give you a rough idea, we used to use 80% carbon steel for our products; now that is down to 20%. We have completely changed our technology and we maintain a high level of competencies in our employees who are guided by a strict quality system. The future looks promising; our top three clients are already obliging us to grow".

In 2005, the company posted sales of \$5M, a 70% growth over 2004; this year, the company is expecting growth of 50% due to the demand for high quality and specification castings, mainly for the cement, petrochemical and rail sectors. Furthermore, the US represents a new high growth potential export market due to the annulment of tariffs on cement.

**OPPORTUNITY NOT THREAT**

With Mexican steel players adapting to global market conditions, Asia becomes more of an opportunity rather than a threat. The sector is becoming more sophisticated, satisfying the high requirements of the United States and thus replacing imports for multinationals present in Mexico, producing for exports as is the case of the automotive, white goods or even the aeronautical industries. This move towards value added steel products is more likely to ensure a sustainable and prosperous future for the Mexican steel industry.

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MEXICO

# IMSA Acero — an interview with Santiago Clariond Reyes

IMSA Acero is Mexico's largest cold-rolled producer and Latin America's largest galvanised and pre-painted steel producer.

Santiago Clariond Reyes, president and CEO, discusses the company's successes, investments and aims.



Santiago Clariond Reyes, president and CEO of IMSA-Acero

*You mentioned an average of \$1000/t. Is this a trend that you see going forward this year and next?*

SCR: Definitely. If you analyse for instance all the appliance companies that are coming to Mexico, and to Monterrey in particular, and the ones that are already here like Whirlpool, Daewoo, Electrolux,

GE and LG, they are all growing. Our analysis shows that in three and a half years, the unit production capacity will grow 80%. That is why we decided on our highly specialised line of galvanised products. In the automotive industry, we

also observe a great deal of growth in the manufacturing of parts. The growth of total units has been declining in recent years but we do not mind as we are replacing imports. Why? Because we have been developing technologies and processes and have been able to acquire the specifications from the headquarters of the different companies such as GM, Volkswagen, Nissan etc. and we have been able to penetrate the sector. We see a very dynamic sector in Mexico and that is why we are investing. We see the opportunity in the fundamental structure of the market with new companies coming into the country. The industrial growth in these sectors is more than three to four times the national GDP figure of 3.8%, which is small. If we look at the growth rate of assembly plants, appliances, air conditioning manufacturers etc., they are growing at 10-15% a year. We participate in those markets. In the long term we see the demand there.

*You have recently restructured the Imsa group. Are you seeing the benefits from the restructuring in terms of cost effectiveness, efficiency, quicker reaction times and service?*

SCR: We are now completing the spin-off of the businesses that are not related to steel. Yes, we have found a good deal of synergies and cost reductions in certain areas. We are taking advantages of these synergies. We have not exploited them to their full potential as it will take some time, but we are enjoying the benefits of restructuring. I think it was a wise decision to separate the steel operations from the others. Our head count has been reduced drastically. We have lowered our working capital and are finding economies of scale. The same thing happened in the US. In some units we make steel components, in others galvanised or steel panels, but they all compliment each other. The US operation takes care of that market while the Mexican operations take care of their local market.

*Will your growth be gained through mergers, acquisitions and joint ventures, or could you in turn be a target for acquisition?*

SCR: Our growth is organic as we are investing in new facilities. We are always looking for new opportunities for acquisitions. We have recently been approached by some of the larger steel groups as you can imagine. We contracted City Group as our advisers to analyse the offers made. As we are a publicly traded company we are obliged to look at all offers made to us, although the family has controlling shares (only 15% is floated). We have to be realistic and aware of opportunities to sell or buy. We have a very healthy and enviable financial balance. We see that the value of our company has increased tremendously in real terms. We feel the prospects for the near future are promising. If you analyse the history of the sector starting with 2004 - which was an extraordinary year and I feel the industry deserved it - but before that say five to ten years ago, steel companies either went into

## MEXICO

Chapter 11 or they were not getting the cost of capital... we were making a great deal of money. Our business profile is less sensitive than that of the integrated steel industry. When the slab price is up it's because the scrap is up, the pellet is up and so the sales price goes up. We follow those waves but we do not care what the sale price or the cost price is. We are interested in the spread between those two variables for profitable margins. Fortunately, it has been that way for the past few years.

*Could you go further downstream with panels etc?*

SCR: Yes. We could go into those products; panels, components, painting lines. We see large potential for growth in these areas, especially in the United States.

*Mexico's steel industry has invested a substantial amount in upgrading technology*

*over the past 10 years or so. What investment has IMSA made in technology and equipment and what investments will be made?*

SCR: We are a company convinced of the importance of innovation. You have to keep on innovating products and finding solutions. We have been investing in technology by acquiring the best equipment to make the best possible product. We implemented the Six Sigma process in all of our facilities three years ago. Six Sigma alone gave us \$80M in savings last year. It is something that we are committed to. It is the only way to survive – reducing costs. Our customers from the appliances and automotive sectors are demanding higher quality and lower prices every year. We have to work for that, our competitors are working towards that and we cannot fall behind the industry trends. So, yes, we believe in technology. We don't really have

the size to commit significant sums to research and development as some of the larger players do, but rather aim to have the latest equipment that gives the best product and productivity. In those terms we are committed to technology.

*Where do you see the company in the next 5-10 years?*

SCR: I see tremendous growth in the company. We are now at the height of its history. There are many opportunities for doing business with third parties. Our organic growth has been described already. Acquisitions are where I see growth. We have the financial muscle, we know what we do very well and we have the people and the experience. We also have an array of opportunities in the US that we will be taking a close look at.

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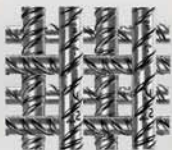


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## MEXICO

# Villacero targets NAFTA opportunities

Villacero is Mexico's largest producer of long products and a principal distributor of steel in the country. In 2005, it produced, processed and distributed over 5Mt of steel and remains one of the lowest cost producers in the NAFTA region due to its integrated steelmaking process. Global Business Reports met with Julio Cesar Villarreal, chairman and CEO, to obtain his insights on the industry and evaluate his commitment to the NAFTA region.



Julio Cesar Villarreal, chairman and CDO of Villacero

**D**o you think that consolidation in the market and creating larger economies of scale will help the sector better control volatile steel prices?

JCV: Most definitely. Steel industry consolidation will set the stage for better market discipline, avoid dumping practices and generate synergies in the benefit and profitability of the world steel industry. We cannot expect steel business cycles to be eliminated, but recent consolidations will definitely contribute to reduce its adverse effects.

*Have you achieved price competitiveness in your local region?*

JCV: The largest Villacero facility has been ranked by World Steel Dynamics as NAFTA's lowest cost producer of wire rod. However, competitiveness goes well beyond price. What really matters is the overall price and delivery conditions offered to the final consumer of our products. Price is obviously a major element in competing, but I find that quality and service are more important in defining the competitive position of a company. We are performing above industry standards and operating well under the average costs. We are in constant competition with ourselves for continuous improvement in those two areas and are committed to do whatever necessary to develop them.

*Does the price difference for steel products in Asia, Europe and NAFTA worry you?*

JCV: As I said, price is only one element of the package we offer. Prices in Asia and Europe respond to specific market conditions in those regions. Most companies export under different conditions and prices to those of their local market. For us, NAFTA, Central America and the Caribbean are all part of our local market. Maybe that is why we are usually deemed to be very responsible exporters, because we take care of our domestic and export markets in a responsible and sustainable way.

In the 1980s and early 90s, Sicartsa (an integrated mine and steel mill that has formed part of Villacero since its acquisition in 1991) exported most of its production to Asia, mainly through Hong Kong traders who would then distribute to China, India and Japan. Villacero has gradually shifted its focus to participate in the value chains of its natural NAFTA market and left Asia to its partners in Germany. So, market distortions should not be so great as to affect each other's regions, assuming that the industry and governments are responsible. Under those conditions, we feel that Asia is a business opportunity for Mexico's steel industry.

*Villacero is a vertically-integrated company. Are you looking for acquisitions or strategic alliances to consolidate your integration?*

JCV: A steel company faces the challenge of supplying its products in an integrated manner, fully coordinated with its suppliers' and customers' processes. Customers demand steel with very precise

specifications and delivery times. Alliances play a key role in acquiring or developing capabilities to provide integrated services. The company currently has associations in every stage of the steel value chain,

including production, transformation, marketing, distribution, servicing and delivery. It is continuously analysing possible new associations in order to consolidate its position, both in the NAFTA region and on a global level. Taking into consideration the price of raw materials and the cost of generating electricity, the NAFTA region needs a better and closer integration of its value chains rather than more capacity.

*What reserves of minerals does the company have in its mines?*

JCV: Sicartsa's mining and steel production business has enough reserves for 45 years of iron ore at current production levels, making its production process very competitive. It is in the top 10% of lowest cost producers of wire rod, rebar and billets in the world and is the lowest cost producer in the NAFTA region.

*The Mexican steel industry has been investing heavily in technology over the past ten or so years. What investments has Villacero made into technology?*

JCV: During the 90s, Villacero invested heavily in ecological technology to achieve 'clean industry' status. Sicartsa developed processes to reduce water consumption and recover sub-products from coal and coke for recycling the energy back into the production process, to avoid releasing them into the environment. Such investments have several advantages, such as lower operating costs, less wastage and considerably less pollution. In the US, we are currently developing direct continuous casting thin strip direct from our furnaces. Technology, which will enable us to produce. We are working in conjunction with external R&D companies to develop this technology.

*There is much opportunity in the domestic market to satisfy local companies. Do you feel that not expanding operations abroad will limit Mexico's steel industry in the future and make it a prime target for acquisition?*

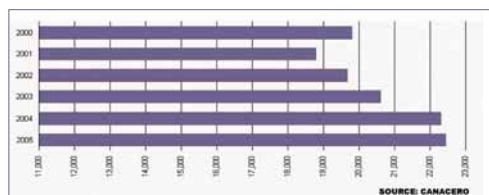
JCV: The NAFTA market represents a great opportunity for Mexican producers, distributors and service centres. The company's geographical location and economic integration gives it an unmatched position to participate in value chains under just-in-time conditions. Expanding operations to the NAFTA region will allow steel companies to achieve the economies of scale needed to remain competitive under the new market conditions. A strong domestic market remains essential as an export platform. We are hugely optimistic about our market. We expect that the steel consumption will grow at an average rate of nearly 5%/y and that some products such as wire rod and drawn products may even grow at rates of 8-11%/y. So, the Mexican steel market represents more than a target; we see it as an opportunity to generate worthy synergies.

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# Mexico's steel sector

The Mexican steel sector has recently seen some healthy growth; today, Mexico is Latin America's second-largest steel producer and ranks 15th globally. This is in contrast to the early 90s, when the industry was suffering from inefficiencies, a lack of technology and a limited international presence – a situation that led the government to divest and privatise the sector in 1991.

The NAFTA region (Canada, United States & Mexico) had a shaky start to 2006 with strikes, labour issues and moderate projections for growth. In the case of Mexico, further uncertainty continued as the country went through its general elections. Mr Felipe Calderón from the National Action Party (PAN) won the presidency but will not be fully established with decision-



Mexican steel consumption chart



Mexican steel production chart

making powers until early next year, a fact that has deterred major investment across the board.

Topping the agenda for Mexican industrialists is the extraordinarily high costs of feedstock, mainly electricity and natural gas. Mexico has water, wind and nuclear power to generate electricity, holds reserves of natural gas and has one of the world's largest reserves of crude oil. Currently, all natural resources are

constitutionally held in government hands with no room for private participation to finance the much-needed investment and technology in the sector. Mexico (and the NAFTA region) has one of the highest quoted energy prices globally, a situation which severely hinders the country's industrial development and competitiveness. In the words of Alonso Ancira Elizondo, the new president of Canacero, Mexico's representative steel industry association, "A country becomes large by the generation of industrial activity and employment, not by having a wealth of resources underground while at the same time importing fuel, a situation that in our case pushes our sector towards becoming unviable."

Regardless of energy conditions, forecasts project that 2006 investments will increase capacity by 9%. At the same time, projections imply that the year-on-year (y-o-y) increase in steel consumption will continue, reaching a high of 23Mt this year, regardless of the deceleration in end-user consumption and the effect of the presidential elections.

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# Mexico's place in the markets

The global steel industry is consolidating at a quickening pace with over half of 2004's \$25.7bn in merger and acquisition (M&A) activity being domestic steel deals; cross-border transactions were worth \$11.3bn. In 2006, however, that trend is likely to be reversed with many companies ready to spend more on foreign companies.

**F**aced with rising energy, raw material and transportation costs, particularly in the NAFTA region, most of the larger steelmakers are looking towards the emerging markets of central & eastern Europe, Asia Pacific and Latin America; these jointly accounted for 43% of deals struck and 31% of total value traded in 2004. The past 18 months have been characterised by severe variations in prices, inventories and margins. With a steady short-term outlook ahead, the industry is looking to consolidation as a solution to tame volatile market conditions.

Many believe that truly global players will be created, with both production and distribution operations in all five continents. In this scenario, companies would easily control production levels according to demand, with less incentive to export. Each region would supply its own demand for steel, leaving value-added or novelty products to be traded freely across regions.

Analysts believe further consolidation is needed in the sector, probably led by China which represents 32% of global production. The Chinese government's consolidation strategy is to integrate the low-profit or money-losing producers into the big players. At least four mergers are expected within the top ten national companies.

Mexico is experiencing similar trends: Latin America's leading producer of flat and long steel products is Ternium – a new subsidiary of Italian-based Techint Group.

Techint, which has been present in Latin America since the 1950s, producing seamless steel pipes through Tenaris, and currently active in steelmaking, infrastructure, industrial plant design and assembly, energy and power, has consolidated its flat and long businesses. Its new subsidiary, Ternium, is the result of merging the operations of steel companies Hylsa (Mexico), Siderar (Argentina) and Sidor (Venezuela). Hylsa was the largest steel manufacturer in Mexico and the one with the highest level of vertical integration, with activities ranging from the extraction and processing of iron ore to the manufacturing of high value added steel products. All three companies - with a combined capacity of over 12Mt/y and production capabilities across Latin America and a worldwide distribution network - will be carrying out important investment plans to increase production and quality.

Ternium began trading on the New York Stock Exchange (NYSE) in February 2006, giving it access to capital to finance further growth, modernise operations and broaden the integration of overall operations in the region. Its favourable access to energy and proximity to iron ore sources, coupled with proprietary mines in Mexico, has helped the company to achieve one of the lowest production costs in the industry and obtain a clear competitive advantage in the region.

Jorge Castilla, senior executive for Natural Resources in Mexico, for the Accenture consultancy, gave his views on

market consolidation: "We believe the consolidation trend in Mexico – and the region – will continue for the next couple of years. I support the idea of more consolidation in the sector and believe we will end up with 4-5 large players with production and distribution capabilities across Latin America, mainly in Brazil, Mexico, Argentina and Venezuela.

"What will be interesting to see," he continued, "is what happens with the sub-sectors or transformers. Are we going to continue to have a switch to technology-oriented niche players, especially in Mexico? Is it going to be multinationals creating joint ventures in Mexico, or will foreign companies build their own plants and facilities here? Consolidation within steel producers will continue – that's for sure - the question is 'what will happen down stream?'"

## DRIVING DOWNSTREAM DEMAND

The main sectors pushing domestic steel demand in Mexico are automotive, construction and white goods. All three sectors have been performing well with healthy growth rates over the past few years which is as well, since there is a direct positive correlation between them and growth in steel demand.

## CONSTRUCTION

Steel consumption in the construction sector has been propelled through the 2001-2010 Programa Nacional de Vivienda. This programme was the administration's

largest success over its six-year term, an initiative that is likely to continue under the new president. This year, the programme will see \$17bn or 750 000 mortgages given to families. Since its inception, the scheme has approved \$6.7bn in housing mortgages so it is not unexpected that 2006 projections for the sector see a high growth rate with further room for growth. Currently, roughly 50% of steel demand in the country comes from the construction sector, 50% of that comprises all buildings.

Siderurgica Tultitlan (Sidertul) has been supplying long products and merchant bars to the construction sector for the past 60 years. For the past five years, its plant has been running at 100% capacity; the company's CEO, Israel Feldman Punsky, outlined his plans for expansion: "We have been supplying and growing with the construction sector for decades. When I entered the company, we upgraded our furnaces to increase capacity to 300t/month. We then had the opportunity to buy and build new machinery, furnaces and plant to further increase capacity to 3000t/month, then to our current 30kt/month.

"The group has recently approved a new project due to begin in Q1 2007, involving an upgrade of furnaces and the continuous casting loading system plus the modification of the rolling lines. These will upgrade our production capacity by at least 35% for a total investment of roughly \$60M; it will be online by 2008.

He continued: "We are dedicated to the construction market and believe demand in the sector will continue to grow; that is why we are investing in new capacity." Asked about the company's success over the years Mr Feldman offered: "Our strengths are the service we offer, our strength in distribution and long-term relationships in our local market. We do not have providers or clients, we have longstanding relationships with friends where there is a history of mutual help." To summarise, having already posted strong growth in H1 2006 and passed the rainy season, the sector is poised for high production through to the end of the year.

## AUTOMOTIVE

About 15 years ago, the Mexican automotive industry was relatively modest and highly protected from international competition. Now however, motor vehicles and parts account for a larger share of NAFTA's intra-regional trade than any other product sector. Three-way auto trade was worth \$125bn in 2004, representing 20% of the total trade among NAFTA partners. From 1994-2004, the value of NAFTA auto trade almost doubled, accounting for 18% of its total growth over this period. Links with foreign companies have given Mexican steel fabricators the technology and know-how to sell competitively into North America and made Mexico a more attractive location for assembly plant investments from Europe and Japan – all good news for the steel industry.

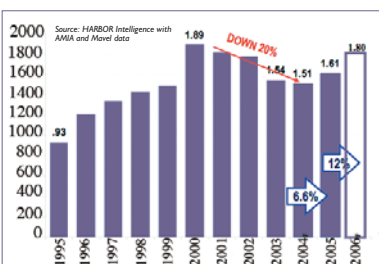
Today Mexico's automotive industry as a whole is in good health, competitive internationally and constitutes almost 10% of domestic steel demand. It is also a key driver behind the development of highly specified products. Although the

production of complete cars slowed last year, local producers have tapped into the growing auto parts market through the acquisition of product specifications and rigorous quality compliance. In 2005 the Mexican government estimated that between 80-85% of the auto parts used in Mexico for domestic production and export are imported – so the potential market is huge.

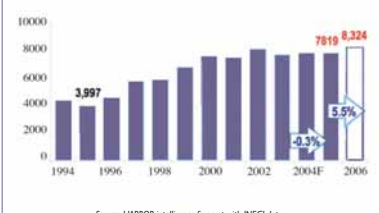
Steel suppliers to the automotive market have a positive outlook on future sector growth with huge opportunities to replace imports and create new demand through innovation.

## HOME APPLIANCES

The home appliance sector in Mexico has seen significant growth both through domestic demand and from manufacturing



Mexican auto production 1995-2006 (M)



Mexican major appliances production (k)

for exported markets. The sheer size of the Mexican market, with consecutive growth in GDP per capita and access to credit facilities, has attracted large multinational players to establish production operations in the country. At a national level, Maytag has 70 suppliers and makes 14% of its total purchases in Mexico – worth roughly \$2 billion dollars. Sources at the Ministry of Economy said that, in 2005, companies in the sector invested more than \$800M in capacity expansions and new plants. It is a difficult sector for processing steel companies to penetrate, due to the vertical integration of large players such as Whirlpool Corp or Sweden's Electrolux which have installed capabilities to process much of the steel used in-house.

The sector is a high consumer of steel and presents opportunities to companies who can offer the quality and service needed to entice new supplier relations.

## SERVICING THE INDUSTRY

As the steel market becomes more international – through joint ventures, acquisitions and strategic alliances – and grows, its supply chains are becoming increasingly complex. Many companies look to transportation and logistics as areas

for cost-cutting, higher levels of efficiency and providing enhanced value-added services – all of which contribute to a higher level of competitiveness in the region. Supply chain management is an interesting growth area, especially as regional and intercontinental operations become consolidated. Having centralised supply chain operations and decision-making power could make a critical difference to companies looking to stay competitive.

Acero Prime, a joint venture between Feralloy, US Steel, and Mitsui, has been tapping into the Mexican market through its unique inventory control programs. Currently, the automotive sector represents 85% of its volume due to the global nature of the companies. Carlos Rodriguez Borjas, executive director explained the company's special supply chain management system: "Our model is a global one that sides with the end-users whereas most distribution companies in Mexico use the traditional model. They focus on buying and selling steel for a profit margin; that is not our formula. We are focused on being competitive on service through the supply-chain. We try to handle large volumes so as to have presence at the ports and we offer these advantages to the steel mills (and indirectly to the end-users) through an extremely competitive logistics infrastructure.

"I'll give you an example," he continued. "Imagine a global steel company and a global automotive company make a deal covering NAFTA, Japan and Europe. The deal involves selling steel as a 'just-in-time' (JIT) service to the stamping plant where the steel is used. In essence, Acero is the one that implements the operation of the commercial agreement reached by the end-user and the producer of steel.

"It has three revenue-generating areas: the first is steel processing, accounting for roughly 20%. Then we have what we call 'integrated services', ie importation and virtual exportation to the end-user, including processing. This area accounts for about 70%. The last area which we just call 'other' includes sales of steel and accounts for the remaining 10%. Our mark-up in this last area is transparent and is done as a service to clients. For the large volume contracts with the automotive sector, we provide JIT service for the life of a vehicle – a vehicle that can have 200-300 parts. Each of these parts is specialised with different grades of steel and what we do is keep track of these and make sure that there is enough in stock and in the pipeline to complete the assembly on a day-to-day basis.

"In this business, the important thing is not to supply 100t/month, it is to supply the steel needed for 200 parts when it is needed. If you don't have steel for a certain part, then that vehicle cannot be completed. We need to make sure that information on inventory shipments is accurate so that products are delivered to the end-user precisely on time. To summarise, Acero is a reliable supplier of steel to the end-user and a reliable communicator of information to the steel mills."

Having used Mexico as a testing platform with success, the company is now looking for opportunities to apply its supply chain management model in eastern Europe,



Brazil and China.

Traditional distributors in Mexico have now recovered from the extreme variations in inventory levels of 2004-05 which were a main contributor to the decline in prices due to the global offloading of extraordinary high levels of inventory. Limiting the purchase of products throughout 2005 brought local prices back up but caused a loss in market share due to steel producers reaching end-markets directly. The risk for local distributors in 2006 lies in falling into the same cycle in the near future. Ing Luis Padilla Sojo, executive director of national distributor Aceros Dondisch and president of Conadiac, the national distribution

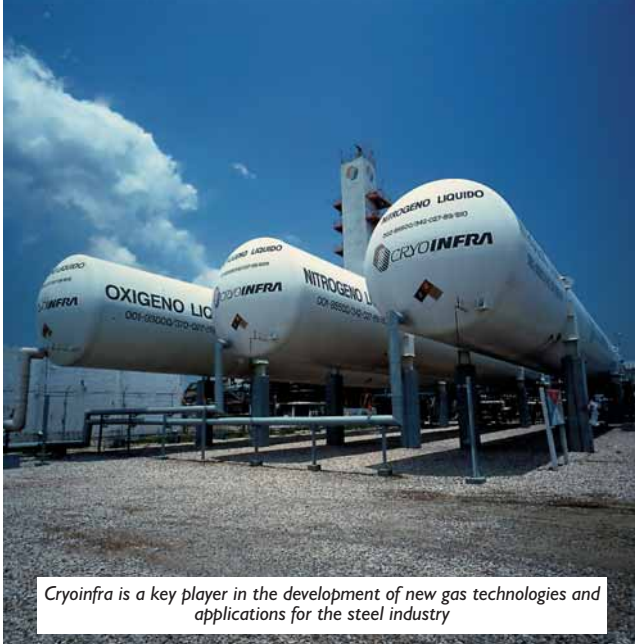
association, explained: "The steel sector in Mexico made the same mistake as in other countries and created an internal feud. Steel companies went over the distributors straight to the end-user. Plants that produce 3.5kt/y are not very concerned with a client that consumes 12t of a single size whereas I consider the same client important and would provide a much higher level of service.

"It's a case of 'chicken and egg'. The producers say they went directly to the end-users because we began to import, and they are probably right. The distributors in turn felt steel companies were inflating prices substantially above regional averages making importing an attractive and lucrative defence. We don't know which came first but it affected us all. Personally, I am an enemy of imports in the sense that I feel Mexico is capable of producing a majority of the steel products that are currently imported. I hope that this past turmoil will stay in the past. I am confident that our differences have been worked out and that we will now work together for the benefit of the sector and the country".

In a push to create greater demand for distribution, service companies are quickly adopting value-added custom services, such as slitting, welding, cutting and inspection, to become further integrated into the supply chain and secure long-term clients.

#### PROCESS GAS SUPPLY

A key element supplying the steel industry and helping in its pursuit to stay competitive are industrial gases. The Mexican market has two key players: Cryoinfra (Air Products' partner in Mexico) and Praxair. Both companies help develop new gas technologies and applications for steel producers and transformers alike. Cryoinfra, which was the first to build an oxygen plant in Mexico, has built close working relationships with steel companies to maintain its leadership position and above-average rates of growth. The company has built and operates numerous on-site facilities, both cryogenic and non-cryo plants for steelmakers and non-ferrous metals manufacturers. Mario Valles Septien, vice-president, explained its competitive advantage: "Praxair are our largest competitor in Mexico. Our products



*Cryoinfra is a key player in the development of new gas technologies and applications for the steel industry*

are similar in quality, transportation costs are also alike and our production technologies and equipment are almost the same. We retain our customers and win new business through the value of our service, the high level of employee competencies and our reputation. The development of new applications plays a very significant role in the company's growth. It currently offers roughly 100 different industrial gas applications for the steel and foundry sector and is continuously working together with its clients to find ways of bettering its costs and efficiencies through the use of gases. It delivers applications such as burners, lances, heat treatment processes, stress relief systems, cutting and welding and scrap recovery to name but a few. Most of its growth is from innovation with existing clients; it helps them which helps the company grow. Alongside local application development, it counts on the investigative power and research investments of its US partners, Air Products. The development, efficiency and future of steel companies and foundries are very much linked to oxygen, nitrogen, argon and hydrogen. The company is working hand-in-hand with its clients every day and will continue to do so in the future".

Praxair, a global leader in gases, has traditionally grouped Mexico into the North America region. The importance and scale of its Mexican operations is shown by its Q1 2006 sales of \$100M. Eduardo Menezes, managing director in Mexico, outlined how its plant technology helps lower costs for mini-mills: "Praxair designs, builds and operates its own plants in Mexico with the support of an engineering/project management team of more than 100 people located in Monterrey, Nuevo Leon. Its non-cryogenic plants with a vacuum pressure swing adsorption (VPSA) system are ideal for oxygen requirements between 10 000 and 200 000 ft<sup>3</sup> per hour (10-200t/day).

"This technology has proven very popular with electric arc furnaces operators, with more than 100 units installed worldwide, including several in Mexico. VPSAs generate lower purity oxygen than cryogenic but require less electrical power, thus helping steel customers to be more cost-effective".

"It also builds and operates large cryogenic plants in Mexico for requirements between 200-2000t/day of oxygen and supports its steel customers with the applications offered worldwide by Praxair Metals Technologies - such as Cojet, DOC (Dilute Oxygen Combustion) and AOD (Argon Oxygen Decarburisation)."

Both Praxair and CryoInfra are projecting strong growth with their respective steel clients.

#### REFRACTORIES

Another multinational with a strong presence in the country is Vesuvius. Supplying the steel sector with high performance specialty ceramics, refractory products and control systems, its Mexican operation is among the company's leading operations worldwide. It consists of three manufacturing plants serving the NAFTA region largely servicing the steel industry, mostly in the flow control business sector. In the words of Luis Reyes, general manager for Mexico: "It is a very demanding application which requires a high level of R&D. A customer once told me 'When you are casting steel, you cannot make it better; the best you can do is avoid making it worse'. That part of the steel-making process is critical for producers and at Vesuvius, we try to be the best suppliers of refractories."

When asked about Vesuvius' level of involvement in supplying the steel industry, he claimed: "In most regions, the company has a very close working relationship with its customers. In some areas such as Mexico, that relationship is extremely close - to the point it has employees available to the customer around the clock, 365 days a year.

"The involvement is such that we become a part their operation. We are not only a supplier to these customers, but an ongoing partner. So, it can be as simple as selling them our product or as involved as becoming an integral element of their operation. Working together with our clients to develop products specific to their needs is very important to us as we do not want to be a 'me too' company". Roughly 50% of the company's Mexican employees work together with clients in the field, to ensure quality and service standards. Given that fact, it is not surprising that every steel maker in Mexico is buying at least one product from Vesuvius."

With its direct correlations to the steel industry, Mr Reyes is naturally concerned with the region's high energy costs and the political uncertainty of the post-election period. Increasing competition from Asia and Eastern Europe is also a looming threat, both to the steel industry and to Vesuvius; on the upside, Mexico has new capacity coming online over the next few years which should help.

Whether distributing, supplying or servicing, the Mexican steel sector has strong, dependable suppliers that contribute to the sector's overall **STI**

# MEXICO Securing the future

Consolidation and innovation, plus value-added services – as with every other steel company in any other region, Mexican companies know the recipe for growth; they just need to follow it.

If the Mexican steel sector is to remain competitive, it must continue to consolidate until it consists of a smaller group of internationally-established companies producing the majority of Mexican steel. Greater market concentration will reduce the valuation gap between the industry and its peers in other industrial product sectors. It will also give individual steelmakers more bargaining power with both suppliers and customers; enhance financial strength and borrowing power; increase operational flexibility (since each will be able to draw on global facilities); and improve attractiveness to institutional investors.

Moreover, since input costs and the size of each producer play such an important role in the steel industry, a large-scale producer will be better able to survive should iron ore prices continue to soar. Many of the vertically-integrated steel producers such as Villacero, IMSA and Mittal already own mines, thus securing future raw material needs. Conversely, small and mid-tier players which do not participate in the M&A action will be forced to focus on value-added steel finishing and niche markets.

YEAR	AHMSA	HILSA	MITTAL STEEL	SICARTSA	TAMSA	MINIMILLS	TOTAL AMOUNT
2000	3 353	2 813	3 672	1 883	780	3 130	15 631
2001	3 034	2 233	2 396	1 737	822	3 078	13 300
2002	2 867	2 781	2 987	1 250	786	3 339	14 010
2003	2 901	2 828	3 574	1 690	773	3 393	15 159
2004	3 015	3 349	4 028	1 749	858	3 740	16 737
2005	3 244	3 182	3 670	1 261	933	3 905	16 195

Steel production by companies

(Source: CANACERO)

YEAR	PIG IRON AND SPONGE IRON	FERROALLOYS	TOTAL RAW MATERIALS	TOTAL SHAPED PRODUCTS	FLAT PRODUCTS	LONG PRODUCTS	SEAMLESS PIPES	CASTING AND FORGING	TOTAL HOT ROLLED PRODUCTS	TOTAL DERIVATED PRODUCTS	GRAND TOTAL
2000	4 155	50 936	550 091	582 697	391 952	339 200	355 525	84 391	1 171 068	691 057	2 499 913
2001	7 744	31 071	38 815	290 318	256 004	371 391	451 722	84 882	1 173 999	536 640	2 039 727
2002	2 190	18 013	20 204	430 284	372 779	382 608	436 704	74 225	1 266 316	635 974	2 352 778
2003	84	26 160	26 244	599 397	411 871	402 797	316 348	3 916	1 134 932	611 085	2 371 653
2004	25	32 791	32 816	1 005 663	631 082	560 606	364 101	8 061	1 563 850	939 114	3 541 443
2005	37	57 540	57 577	1 070 497	820 132	670 833	661 944	16 451	2 169 360	1 020 689	4 218 123

Mexican steel exports

(Source: Central Administration Office of Information)

## CREATING A FOREIGN PRESENCE

Mexico has one of the lowest per capita steel consumption rates in the world yet stands as the 11th most populated country - a situation that tempts local steel companies to concentrate on the domestic market for growth. In May 2005, Mexico entered into free trade agreements (FTA) with the European Union, Israel, Japan, Chile, Costa Rica, Colombia, Venezuela, Bolivia, Uruguay, Nicaragua, Guatemala, Honduras, El Salvador, and the European Free Trade Association (EFTA) countries, in addition to NAFTA. FTA talks are ongoing with the four South American nations of the Southern Cone Common Market (Mercosur).

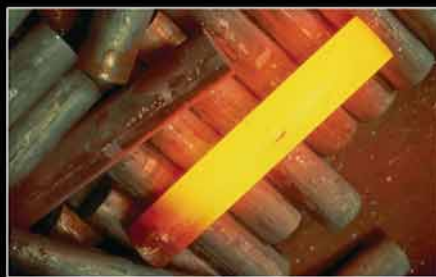
At the regional level, Mexico is one of 34 countries negotiating the Free Trade Area of the Americas (FTAA). All these trade agreements should encourage new investment in Mexico, in the auto industry and other sectors, to serve the North American market and to open opportunities in the western hemisphere, Europe, and Asia.

STI



## Revolutionizing steel making with industrial gases

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