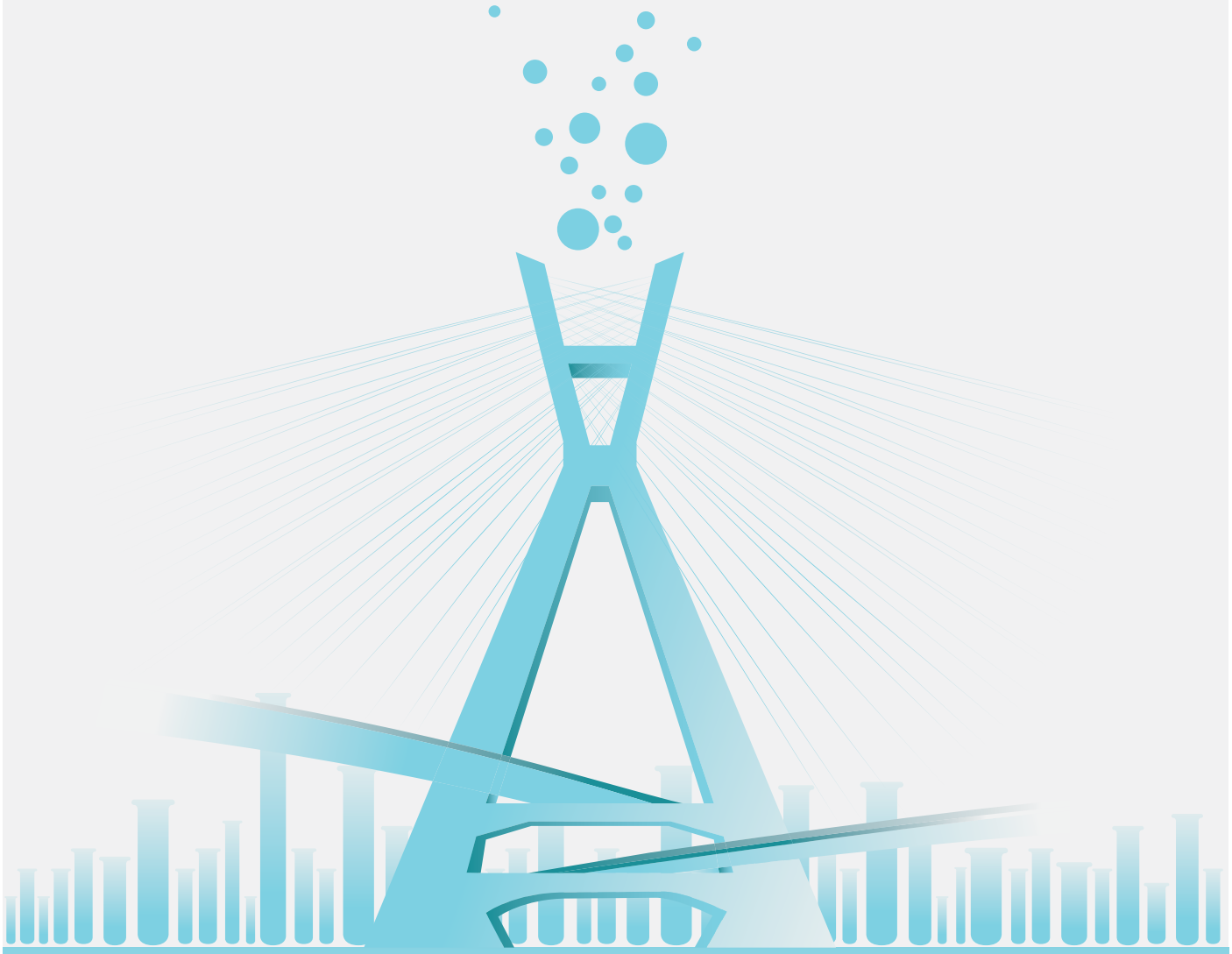
GLOBAL BUSINESS REPORTS

INDUSTRY EXPLORATIONS



BRAZIL CHEMICALS

2013

Economy - Petrochemicals - Specialty Chemicals - Distribution - Logistics

Dear readers,

Brazil will be a name that we will be hearing a lot more often than we usually do over the next three years, with both the 2014 FIFA World Cup and the 2016 Olympic Games taking place in the beautiful South-American country. Beyond the billions of sports fans that they will attract in front of TVs worldwide, these mega-events also constitute one of the keys to understanding the current social and economic climate of Brazil.

Brazil was one of the world's best performing countries three years ago, coming out of the recession in 2010 with a strong GDP growth rate of 7.5%. This fact, coupled with the expectations for progress that the upcoming WC and Olympics generated, put Brazil on a high-horse of confidence for future development. It is therefore no surprise that the 2.7% GDP growth rate of 2011 and the 0.9% of 2012 (the lowest of any of the BRICs during that year) came as big disappointments, creating a wave of discontent across Brazil. The people went out on the streets asking for strategic investments not only in $400 million stadiums, but in infrastructure, health and education: the foundations of a healthy economy and of a strong country.

It is within this social-economic climate that Brazil's Chemical Industry, the country's fourth most important sector, is trying to revitalize itself and gain international competitiveness. The industry's tremendous versatility and virtually infinite pool of end-applications puts it in a privileged position, which allows it to take advantage of the country's best performing market segments. Over the last 10 years, Brazil has seen 30 to 40 million of its citizens advance from the D and E social classes to the midlevel C class. The majority of this shift occurred in the NE of the country, a region that hosts 28% of Brazil's population, but accounts for only 13.5% of the nation's GDP. The newly formed middle class is now seizing life's small luxuries one step at a time: from better personal care items to basic cars, people are gradually getting locked into the consumerist lifestyle. Furthermore, although implemented at a slow rate, governmental programs such as "Minha Casa, Minha Vida" are boosting the construction market and implicitly, the paints and coatings sector. Meanwhile, as the world's demographics continue to rise, Brazil will only reinforce its global food-producer status, thus stimulating its crop protection and food-additive markets. With so many end-market opportunities then, what is holding back the world's sixth largest chemical market? Tracing the cord back to the wall, we find that Brazil's primary raw material and energy prices are dramatically higher compared to those of other jurisdictions, fact which subsequently affects the entire supply chain; historically high capital costs and interest rates make the situation even more difficult. These realities, alongside the recent shale gas boom in the US have made the country unattractive for major petrochemical investments, at least for the moment, further perpetuating its high-cost environment. Additionally, according to ABIQUIM, Brazil's chemical industry invests, on average, only 0.87% of its revenues in R&D, as opposed to the USA's 1.5%, and this lack of interest for innovation is one of the causes for which the sector is still dominated by low-added value players. However, where there is will, there is a way and national giants and success-stories Braskem and Oxiteno are paving the way in terms of innovation, leading by example. The key moving forward will be to find a solution for Brazil's excessive raw material costs and given the natural resource richness the country possesses, it is only a matter of time until this will occur.

This book is a microcosm of the diversity of players active in Brazil's chemical industry, ranging across the supply chain, from upstream basic petrochemicals producers all the way down to the country's bustling chemical distributor market players. From Rio de Janeiro, to Sao Paulo, to Campinas and beyond, our team has had the pleasure of interviewing companies that made history for Brazil's chemical industry and that will continue to forge the sector's present and future. We would like to extend our gratitude to all those who shared their insights and expertise with us.

Razvan Isac, Ana-Maria Miclea,
Clotilde Bonetto Gandolfi and Nathan Allen,
Global Business Reports

Industry Interviews

Exclusive interviews with major chemical manufacturers such as Petrom, Oxiteno, BASF, Dow Corning, Evonik and Linde Gases reveal the true opportunities and challenges of Brazil.

18, 26, 41, 54, 56, 63

Analysis

Viewpoints from the GBR on-the-ground team on the subjects of mining opportunities in Mexico and security concerns affecting operations in the country, taken from our weekly newsletter the GBRoundup.

32, 76

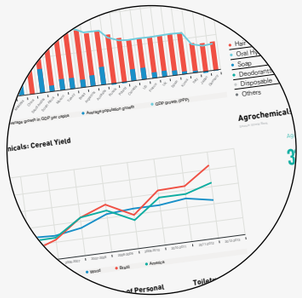
Expert Opinions

Brazil's industry leaders give their thoughts on the increasing importance of environmental sustainability in their products and operations and the infrastructure challenges facing Brazil.

25, 82

Quantitative Data

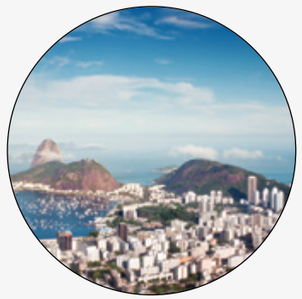
The most relevant quantitative data presented in the most easily accessible format, allowing you to view economic and market statistics, identify trends and visualize infrastructure.



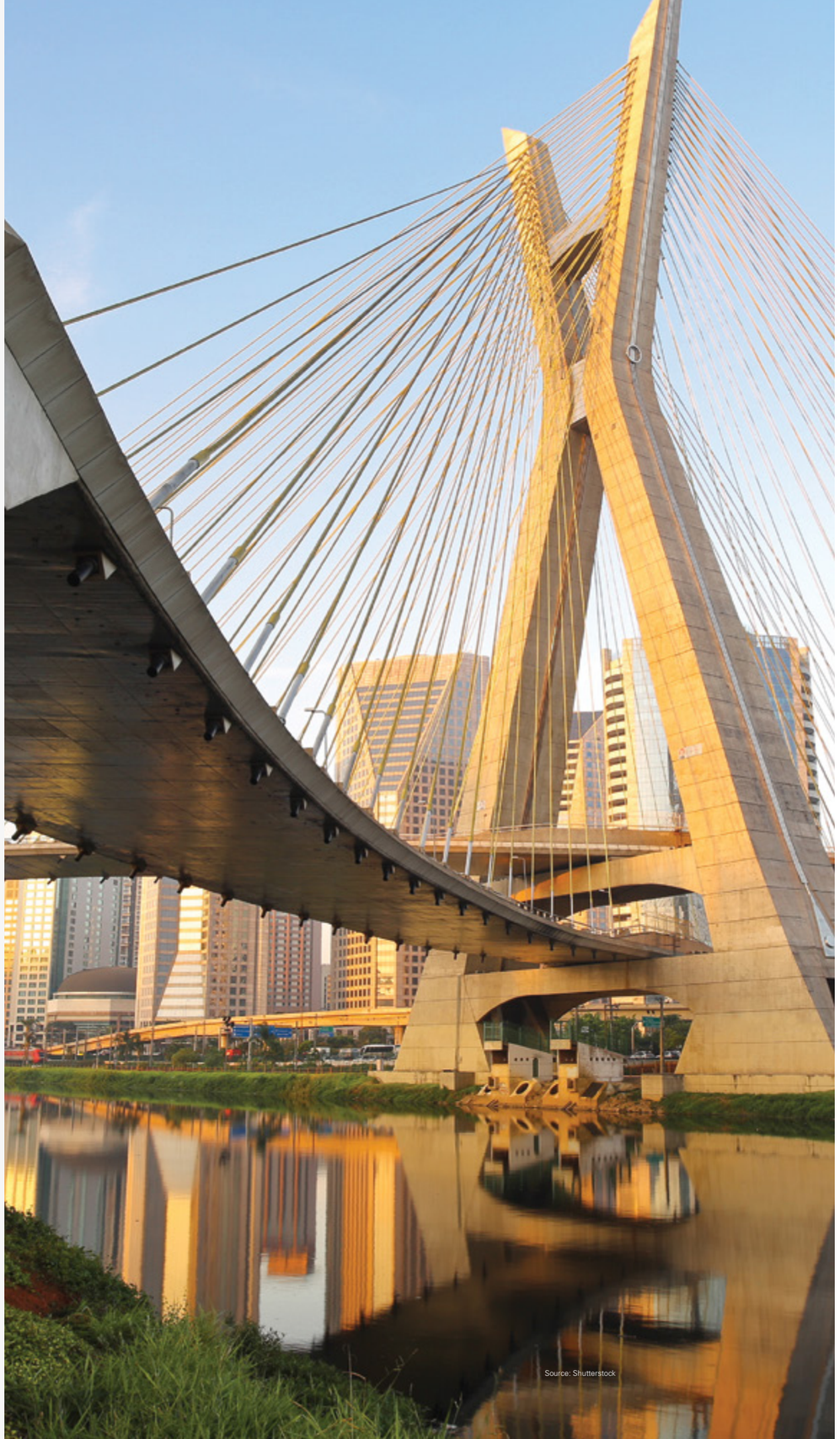
9, 39, 53, 83

Final Thoughts

Thoughts on the future potential of the Brazilian chemical industry, the challenges it faces, the path it must take to overcome these, and the opportunities present, from leading businessmen and industry figures.



90, 91



Source: Shutterstock

Overview

The Giant of South America

Processing Hydrocarbons

Petrochemicals and Biofuels in Brazil

Innovation for Growing Needs

Specialty Chemicals in Brazil

Reaching Demand

Distribution and Logistics in Brazil's Chemical Industry

Appendix

Into the Future

This research has been conducted by Clotilde Gandolfi, Razvan Isac, Ana-Maria Miclea and Nathan Allen
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Graphic Design by Gonazalo Da Cunha
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The Giant of South America:

An Introduction to Brazil and its Chemical Industry

"In Brazil the chemical sector is the fourth most important industry in terms of GDP share, coming behind only mining, food, and the automotive sector with estimated net sales of US$153 billion in 2012. The industry's main exports are thermoplastic resins: there is very little production of more expensive specialty chemicals, which are mostly imported. This has led to a growing trade deficit in almost all sectors of the chemical industry, and we expect this deficit to continue to expand. Our principal trading partners are the USA and other Mercosur nations. There is strong internal demand for chemicals, triggered largely by growth in the construction and agricultural industries, and increasing need for consumer goods by the general population. Over the last 20 years the chemical industry has grown 25% above the rate of GDP and the forecast is for this trend to continue."

- Fernando Figueiredo, President,
Associação Brasileira da Indústria Química (ABIQUIM)

Source: Shutterstock

An Introduction to Brazil

A brief overview of the country and economy

On the 6th of June 2013, several hundred Brazilians gathered on Paulista Avenue in Sao Paulo to protest a BRL 20 cent raise in bus ticket fares. This solitary event served as the spark for the massive flames of protest that engulfed Brazil in the summer of 2013. These protests were a manifestation of the growing disappointment in Brazil's economic performance and as such, they had merit. Brazil saw GDP growth of 0.9% in 2012, the lowest of the BRICS, and a 0.8% contraction in industrial output. Arguably, the development expectations that were based on leveraging the upcoming World Cup and Rio Olympics have not been met, and Brazil has increasingly less time to use these events as a slingshot to growth.

The perception of Brazil as the epitome of unfulfilled potential has, unfortunately, some basis in reality. After rapid growth in after the turn of the century, it was only a few years ago that Brazil was spoken about as one of the world's most exciting markets: less insular than China, untapped mineral wealth, a raw demographic potential that was almost unmatched by anywhere else in the world, and a climate, disposition and culture that made business easily conflated with pleasure. Today, 2012's GDP growth is the latest in two and a half years of disappointment. The 2.4% growth forecast for 2013 is not bad by the standards of turgid recovery in the USA and Europe, yet it falls well short of potential.

The recent unprecedented outburst of public demonstrations across the country is a clear barometer of the prevailing national sentiment. The population believes that Brazil can do better. They are right.

Brazil can point to a number of challenges hindering its development, some internal and some external. It can perhaps gain some leniency from the fact that it is not alone: Latin American countries across the board, with a couple notable exceptions, are recording distinctly mediocre economic performances. Yet challenges are surmountable. Brazil's status as the dominant country on the continent – in terms of GDP, population and landmass – means that it should be leading the pack, rather than sitting among its peers.

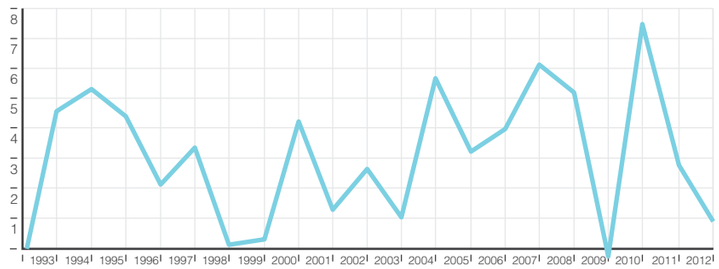
The acute shortage of skilled labor remains problematic and infrastructure coverage in many areas is sorely lacking, particularly in terms of public railroads and ports. The bewildering array of taxes levied on domestic manufacturers makes it difficult for the local industry to remain competitive, and the astonishingly slow speed with which approvals and permits are awarded, especially in the mining industry, is a major stumbling block to the development of new projects. Infrastructural underdevelopment, expensive raw materials, insufficient technological emphasis and a governmental tendency towards overprotection will continue to hinder Brazil's most promising sectors, such as the chemical industry. Solutions exist for each of these issues and they are implemented. The pace is slow, but companies remain optimistic: such huge potential cannot go unfulfilled forever. "There is a lot of optimism in Brazil surrounding the forthcoming mega-events and the new infrastructure that is accompanying these events presents direct opportunities for our company. However, beyond these direct consequences, we are confident that these events will help promote a more systemic change in consumer behavior. Brazil has always been a country that demonstrated huge potential and its significant internal demand will bring several new exciting opportunities for us," said Angelo Bianchini, regional president of Latin America for Dow Corning.

If the right political moves are made then there is little doubt that the situation will improve. Legislative measures such as the New Ports Law, which will open up the country's ports to private investment, are a sure step in the right direction, and whilst the release of the long-awaited New Mining Framework is far from a panacea, it is at least a definitive action that should serve to attract investment to the mining industry.

In the meantime, the country is not without its success stories. Though the overall picture may not be the high growth and excitement that the past decade promised, some companies have still managed to tap into Brazil's potential despite the issues. Increasingly, local companies are not just competing on the international stage, but taking a leading role in innovation and quality. If they can achieve success despite the current issues, they will be extremely well placed to thrive once firmer foundations are set. •

GDP Growth Rate (%)

Source: World Bank, CIA World Factbook



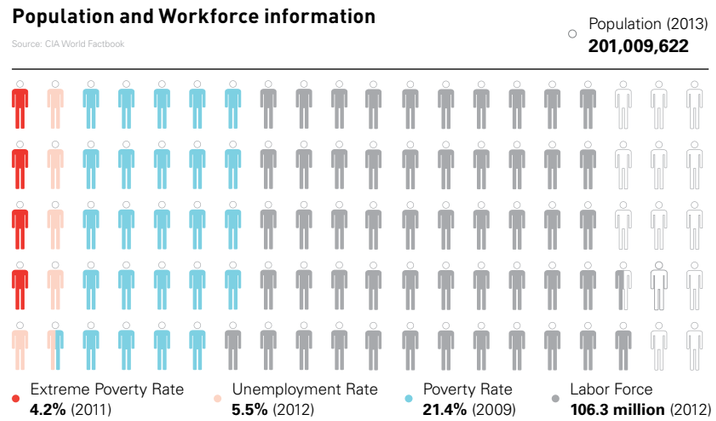
Brazil at a Glance

Source: CIA World Factbook

Population: 201,009,622 (July 2013 estimate)
Capital: Brasilia
Head of Government: President Dilma Rousseff
Currency: Real (BRL)
GDP: $2.396 trillion (2012 estimate)
Growth Rate: 0.9% (2012 estimate)
GDP per Capita: $12,100 (2012 estimate)
Economic sector breakdown: agriculture: 5.2%, industry: 21.5%, services: 68.5% (2012 estimate)
Exports: $242.6 billion (2012): transport equipment, iron ore, soybeans, footwear, coffee, autos
Imports: $223.2 billion (2012): machinery, electrical and transport equipment, chemical products, oil, automotive parts, electronics
Major Trade Partners: China, US, Argentina, Germany

Population and Workforce information

Source: CIA World Factbook



INTERVIEW WITH

Dr. Fernando Pimentel

MINISTER OF DEVELOPMENT
INDUSTRY AND FOREIGN TRADE

Ten years ago, the main trading partners for Brazil were the USA and Europe. Since then, Brazil has seen a diversification of its export reach, which has increased by 450%. Could you provide us with an overview of these developments?

Between 2003 and 2012, Brazil's trade flow grew from $122 billion to $466 billion, and over the same time period exports grew from $73 billion to $243 billion. Our increased presence in global trade confirms the effect of a series of measures adopted by the federal government in recent years in order to augment the level of national exports. The governmental policy for foreign trade was conceived in order to protect traditional industry sectors, much like in the USA and in the EU, while also looking out for new trade partners and opportunities, particularly in Africa and Asia.

In order to feed this industrial growth, imports were also augmented to supply the raw materials still not produced in Brazil. In 2003, imports were worth $48 billion and last year they reached the amount of $223 billion. This demonstrates the degree to which the country is open to commercial trade with other nations. In 2012, import-export activity was done with over 120 countries among which the main trade partners were China, the US, Argentina, Germany, and the Netherlands.

Plano Brasil Maior underlines the Federal Government's industrial policy for the upcoming years and contains a series of tax reforms and incentives that will increase the competitiveness of Brazilian industries. Could you provide us with an overview of its most important components with regard the country's chemical industry?

Plano Brasil Maior is the industrial and technological policy for services of foreign trade and this initiative brings together a series of actions and measures that have the aim of strengthening the national industry in the face of international competition. With this in mind, 19 priority sectors were chosen due to their economic importance and the competitive challenges they face due to excessive imports or a lack of innovation.

Plano Brasil Maior has four main goals for Brazil's chemical sector: to diversify and add value to local production, to encourage investment in chemical products originating from renewable sources, to reduce the cost of raw materials, and to increase investment in research development and innovation, while giving incentives for setting up research centres. In order to achieve these objectives, one of the main actions that will be implemented is the creation of specific tax regulations for the chemical industry. The measure announced by the government at the end of last April, to lower taxes on raw materials until 2018, aims to increase competition between companies and encourage new investment. The main targeted sector is that of "green" chemicals, which use biomass by-products from pulp and sugar cane. By taking these measures, we hope to provide a boost to the competitiveness level of the Brazilian chemical industry and to improve the sector's trade balance, which has been incurring a deficit over the last few years.

The Federal Government recently announced a $7 billion package of incentives for the domestic pharmaceutical sector. Could you provide us with an overview of its main measures and how they will impact the market?

The Inova Saude plan, which is one of the components of the more extensive and complex Inova Empresa plan, has the main objective of strengthening the domestic industry for medical equipment. The main goal of this set of measures is to allow Brazil to have a stronger and more independent healthcare market in respect to foreign trends and influences. By implementing these policies, the federal government hopes to thus reduce the deficit in the healthcare sector which now currently amounts to R$10.5 billion. The formation of partnerships between public and private laboratories for the domestic production of drugs and medical equipment will constitute one of the main actions that will be taken within the Inova Saude Plan.

Apart from the R$1.3 billion which will be dedicated to investments in infrastructure and public laboratories, the federal government will also make R$7 billion available as credit for Brazilian companies with innovative projects in the field of healthcare. We will also announce a reduction in the duration of patents for drugs that are considered a priority, such as the ones used for the treatment of cancer or AIDS. Today, these patents last nine years and we want to reduce that by at least one year. We are working to complete these objectives that will surely contribute to making the Brazilian healthcare industry much more competitive. Overall, these measures will encourage foreign investment and will foster an environment in which the Brazilian national healthcare sector can thrive to become an international leader.

What will be the main industrial sectors that will drive investments in Brazil over the next three years and what is Brazil's economic outlook for the future?

In the last few years, Brazil has seen around 40 million consumers cross the poverty line to enter what we call the new middle class and this movement within the Brazilian social pyramid clearly owes a lot to the social programs adopted by President Lula's government. The end result of this social transformation is that Brazil now has the fifth largest consumer market in the world, for every type of product, ranging from hairpins to automobiles and airplanes. •

Courtesy of Aditya Birla Columbian

Chemicals in Brazil

A Bump in the Road to Growth

Few industries are as well placed to take advantage of demographic trends as the chemical sector. A large population and growing middle class translates to a growing demand for chemicals, in a relation far more direct than that of other economic sectors. In this simplistic yet accurate assessment, Brazil's chemical industry is arguably one of the most perfectly placed in the world.

Brazil has its challenges: the infamous "Brazil cost" one of many. It has not escaped the effects of the country's recent economic slowdown. Yet its chemical sector has been built through challenging times and now, internationalized and increasingly mature, it is poised to take advantage of the country's 190-million strong market.

In the last 10 years, somewhere around 30 to 40 million Brazilians have moved up from the D and E classes to the C class, which is designated as the new middle class. These new middle class citizens have an income that varies between 1,100 BRL ($500) and 4,500 BRL ($2,000) per month and, with the majority of this social movement occurred in the historically undeveloped northeast of the country, new regions are opening up.

All this translates to new business opportunities, as Marcio Guimaraes, commercial director of Vetta Quimica, a paints and coatings-focused chemical distributor belonging to Oswaldo Cruz Quimica Group, details: "The geographical distribution of wealth creates opportunities in Brazil and it must be properly understood: the southeast of the country, which has 42% of the population, accounts for 55% of the GDP, while the northeast of the country, which has 28% of the inhabitants, only generates 13.5% of the GDP. This discrepancy is tremendous and we are expecting the northeast region of the country to continue its fast double-digit growth during the following years."

It is within this context that this report makes the case for a strong future in Brazil's chemical industry, despite the sector experienced its first slight contraction in four years. Despite expensive raw materials and trade deficit of $29 billion in 2012 caused by the lack of high margin specialty chemicals produced in the country, Brazil's chemical sec- tor nonetheless remained the country's fourth largest contributor to the economy in 2012, with sales of $153 billion.

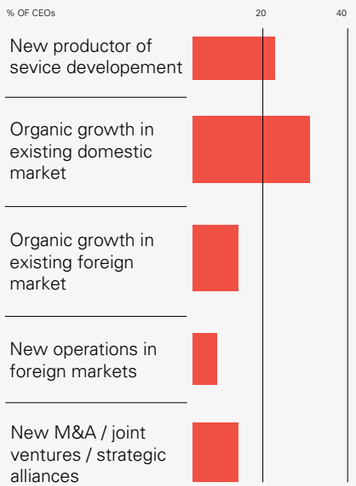
Infrastructural underdevelopment, expensive raw materials, insufficient technological emphasis and a governmental tendency towards overprotection will continue to hinder Brazil's chemical industry. However, solutions exist but are implemented gradually, albeit slowly. Angelo Bianchini, regional president of Latin America for Dow Corning, shares his views on Brazil's future: "There is a lot of optimism in Brazil surrounding the forthcoming mega-events and the new infrastructure that is accompanying these events presents direct opportunities for our company. However, beyond these direct consequences, we are confident that these events will help promote a more systemic change in consumer behavior. Brazil has always been a country that demonstrated huge potential and its significant internal demand will bring several new exciting opportunities for us."

Indeed, the market is becoming more globalized, and as internal competition intensifies, both local and multinational companies are investing more in R&D and thus more technologically advanced and higher-margin solutions. Infrastructure is gradually being developed and regulations such as the ports' investment law will only benefit the country. Moreover, Brazil's hydrocarbon wealth, including its shale gas reserves, offers opportunity for continued and increased exploitation that will stimulate the downstream petrochemical industry. As the world's population keeps growing, Brazil's enormous agricultural potential is naturally positioned to feed it; and in doing so provide ample opportunities for agrochemical producers.

To top it off, 190 million Brazilians are getting incrementally richer and are displaying increasingly consumerist behaviors that will continue to drive the nation's automotive, electronics, food and personal care markets. Brazil may face its challenges. It may have proved disappointing over the past few years. Yet its political stability, size, resources and culture almost guarantees growth: growth that the chemical industry is best placed to benefit from. •

Growth Opportunities as Seen by Brazil's CEOs

Source: PwC



Predicted Chemical Production Growth (2012-2020)

Source: UNEP, ACC

COUNTRY	CHANGE, 2012 -2020
North America	25%
United States	25%
Canada	27%
Mexico	28%
Latin America	33%
Brazil	35%
Other	31%
Western Europe	24%
Emerging Europe	35%

INTERVIEW WITH

Fernando Figueiredo

PRESIDENT
ABIQUIM

Brazil as a whole struggles to be competitive internationally: how does Brazil plan to meet this challenge?

ABIQUIM is strongly in favour of open markets both nationally and internationally and believes that they are a positive force to stimulate competition and development in the industry. However, what we must fight against is unfair competition from abroad. This falls into two main categories: firstly, the practice of factories, particularly in China, selling a relatively small amount of their product domestically so they can make a profit at home, and then offloading the excess at extremely low prices here in Brazil simply so they can run their plants at full capacity. The second problem is currency manipulation, above all by Mexico and China, which makes Brazil's currency uncompetitive. It is permitted within the WTO Treaty to retaliate against any country that is artificially devaluing its currency so in theory we could see import duties against China come into effect as a protective measure. The Brazilian government has raised this possibility at WTO but it is seen more as a gesture than as a likely course of action. Recently, the situation has improved and we have a more favourable exchange rate with the USA that looks set to become even stronger although realistically, because of inflation, the government will try to maintain the rate at somewhere between R$1.95 to R$2.05 to US$1. As well as this, the country continues to maintain relatively high interest rates; admittedly the Central Bank has recently slashed rates to a record low and the government has approved lower rates for investors in the country, but in spite of this they are still high compared to other countries and ideally we would like to see them fall even further.

Does the chemical industry suffer as a result of the lack of diversity in the oil and gas sector in Brazil?

In a word, yes. Brazil does not have many basic raw material suppliers. There is a dominant position by Petrobras, and as any other monopoly, there will be always a certain nuisance between the parties involved. To give you an example, agriculture has grown enormously, prompting great activity in the fertilizer industry, which grew 4.1% in 2012, but imports of intermediates are also rising drastically. At the moment domestic production of urea stands at only a third of the amount of the market, and two thirds are being imported by the country. The reason for this is that its production requires access to cheap gas, which of course we do not have. As a result, every year Brazil imports the equivalent of an entire factory's output of ammonium and urea. Since the previous government put a stop to the short-lived privatization of infrastructure there has been no real investment in transportation for almost 10 years, with the exception of the privatized ports, of which there are very few. Brazil desperately needs serious investment in infrastructure, particularly in gas pipelines, in order to bring the overall cost of gas down to a viable level.

In the context of the burgeoning consumption of the middle and lower classes, what does the future hold for the Brazilian chemical industry?

In all probability, demand will continue to expand as more of the population comes out of poverty and begins to consume at a higher rate. Domestic production will certainly increase, but imports will doubtless grow at an even higher rate. I cannot tell you what the industry's deficit will be in 2014, but I can say with conviction that it will be higher than it was in 2013. The reason for this is that there are only two large-scale projects planned for this year: Petrobras' COMPERJ petrochemicals site in Rio, and BASF's production complex for acrylic acid, butyl acrylate and superabsorbent polymers in Bahía. Speaking more generally, we have high hopes for development in the automotive sector, which has historically been an extremely dynamic area of enterprise in Brazil, to help stimulate the chemical industry. As vehicle manufacturers strive to cut down on weight and improve fuel efficiency, plastics are becoming increasingly important materials, and it is predicted that within five to 10 years the engine will be the only non-plastic component in most cars. We are also looking to develop the potential of renewable and alternative feedstock such as quartz, which can be used in the production of a variety of silicon based substances from cosmetics to chemicals used in oil extraction operations, and lithium, which is the material of the future for batteries. It is common knowledge that Brazil has enormous reserves of biomass, particularly in the form of sugarcane, and we hope that by 2020, between 20% and 25% of chemical products will be derived from renewable feedstock. Last year we received delegations from France, Canada and Finland where they are conducting advanced research into the potential of these chemicals. The Brazilian Government offers a great amount of resources in order to finance research and development activities, but most of them aren't being used due to the lack of projects or even the companies' unfamiliarity with those resources. •

Processing Hydrocarbons:
Petrochemicals and Biofuels in Brazil

"In terms of petrochemicals, the prices are usually based upon the international environment and not solely on the Brazilian market. In fact, this is true almost for all raw materials that we use with the exception of natural gas. The price of the natural gas was driven down significantly due to the shale gas explosion in the USA and made it difficult for us to compete in products that are derived from natural gas. Unigel, together with the Chemical Association, has been working with the Brazilian government in order to find a solution to this problem and be able to work with natural gas at international prices. One of our strongest arguments is the fact that the natural gas as a raw material for the chemical industry is only about 5% of the use and we hope that the government takes measures that would benefit the entire industry in this relation."

- Henri Armand Slezynger, President and CEO, UNIGEL

Courtesy of Granbio

Brazilian Petrochemicals

In the shadow of the US shale gas boom

The shale gas boom in the USA has been a boon for the country's East Coast petrochemical industry, giving them access to an ample and cheap source of feedstock. Yet other nations have found that US developments place their own high feedstock costs in sharp contracts. In Brazil, high raw material prices still represent a major obstacle to petrochemical development, and investors are cautious around large capital expenditures in the sector. The challenge in Brazil is not the presence of raw materials: natural gas proven reserves of 416.9 billion m2 and crude oil reserves of 26 billion barrels should be adequate to support the downstream industry. Instead, the challenge can be attributed to low investment in a sector where the last cracking facility was built in 1982. As a result, natural gas prices in Brazil oscillate around $10 per Million Metric British Thermal Units (MMBTU), as opposed to $3.79 in the USA.

Fernando Figueiredo, CEO of ABIQUIM, summarizes the challenges that the industry is currently experiencing: "There is not enough investment to encourage optimum performance, with an average of $4 billion per year invested in the sector when closer to $15 billion is needed. There are several reasons for this: firstly, the prohibitive cost of raw materials acts as a major deterrent to investors. Secondly, the relative cost of investing in Brazil is 25% higher than in China and 10% higher than in Mexico. Thirdly, transport infrastructure is lacking in many places and is also very expensive. The industry also suffers from a lack of investment in R&D, with only 0.87% of total revenues invested in research compared to approximately 1.5% in the USA. Further to this, we face serious funding problems when building so-called 'pilot plants', the intermediate step between the laboratory and full-scale production. Finally, the number of university leavers graduating with chemistry-related degrees has grown from 3,389 in 2000 to over 8,000 last year, but the industry ideally requires 20,000 graduates per year to sustain the growth."

Henri Slezynger, President and CEO of Unigel, discusses the prices of natural gas in Brazil: "In terms of petrochemicals, the prices are usually based upon the international environment and not solely on the Brazilian market. In fact, this is true almost for all raw materials that we use with the exception of natural gas. The price of natural gas was driven down significantly due to the shale gas developments in the U.S. and that made it difficult for us to compete in products that are derived from natural gas. Unigel, together with the Chemical Association, has been working with the Brazilian government in order to find a solution to this problem and be able to work with natural gas at international prices. One of our strongest arguments is the fact that the natural gas as a raw material for the chemical industry is only about 5% of the use and we hope that the government takes measures that would benefit the entire industry in this relation."

Founded in 1966, Unigel is the leading Latin American producer of acrylics and styrenics, and its business is structured based on a portfolio of chemical, petrochemical and plastic products, across 12 production sites and seven distribution centers in Brazil and in Mexico.

Further downstream, Baerlocher, a German company with a history of 40 years in Brazil, focused on PVC, polyethylene and polypropylene additives, is experiencing first-hand the domino effect of high raw materials prices. Juarez Costa, president of Baerlocher, details the situation: "The problem is not a lack of oil per se; in theory we extract enough to cater for domestic requirements, but the problem is that we do not have enough refineries. We are stuck with a weird situation where we are forced to export our oil, and then import derivatives, obviously at a much higher price. As a result, we are still net importers of petrochemicals and plastics when this really should not be the case given the resources at our disposal."

The above-mentioned factors have pushed Brazilian petrochemical powerhouse Braskem to delay its decision regarding its investment in Petrobras' COMPERJ, the largest planned project in the petrochemical industry, valued at $8.5 billion, to 2014. The Rio de Janeiro-based complex would encompass a world-scale ethane cracker (approximately 1.2 million mt/y), as well as polypropylene, polyethylene and polyvinyl chloride units that would primarily supply Brazil's national market. Meanwhile, the construction of Petrobras' refineries is seeing progress, with production set to start in 2016. The project would place Braskem close to pre-salt oil reserves and it would additionally allow it to balance its raw material portfolio, which currently stands at 80% naphtha and 20% gas. Braskem also decided to delay its plans for its second green polyethylene plant and its first green propylene plant. Finally, Dow Chemical and Mitsui have postponed the construction of their $1.5 billion biopolymer plant in Santa Vitoria, Minas Gerais, a facility that will represent Dow's largest investment in the country.

Arguably, the industry has high-performing companies among its ranks, but the prohibitive raw material prices have forced these companies to shift production abroad, to countries such as Mexico, where costs are lower. Braskem is currently focusing its efforts on Etileno XXI, a major petrochemical complex in Veracruz (Mexico), which will include a 1.05 million mt/y ethane cracker and a polyethylene plant. The project, for which financing of $3.2 billion has already been secured, will a have a total investment value of $4.5 billion and is run together with Grupo Idesa as a joint venture called Braskem Idesa (65% of Etileno XXI is owned by Braskem and 35% by Idesa). Meanwhile, Oxiteno, one of Brazil's most technologically advanced chemical companies, has seen a strong internationalization of its business during the past 10 years, and its foreign operations now account for 30% of the company's revenues.

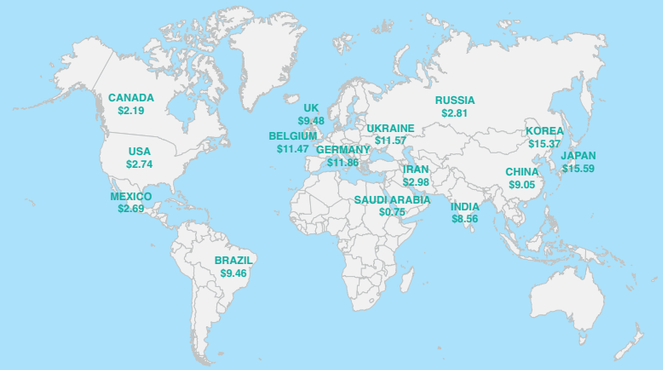
Nonetheless, Braskem, which was formed in 2002 by the consolidation of six companies (Copene, OPP, Trikem Nitrocarbono, Proppet and Polialden), remains Latin America's leading petrochemical company (aromatics, oleofins, solvents etc.) and Americas' top thermoplastic resins (polypropylene, polyethylene and PVC) producer. With 7,600 employees and 36 industrial plants spread across Brazil, United States and Germany, the company produces over 16 mt of thermoplastic resins and other petrochemicals per year. This was made possible by the company's expansion in the late 2000s, when it announced the acquisitions of compatriots Politeno, Petroquímica Triunfo, Quattor and the polypropylene business of American Sunoco Chemicals.

Petrobras' dominant position in the oil and gas industry has greatly influenced the petrochemical and chemical industry and its players, and perhaps none have witnessed the evolution of the sector better than Elekeiroz. Elekeiroz works with three distinct groups of chemicals: plasticizers and their intermediates (Octanol, Butanol, Phthalic Anhydride); thermofix resins and their intermediates (maleic anhydride, formaldehyde and UFC) and finally the production of sulphur. Despite the Brazilian chemical industry's slowdown in 2012, Elekeiroz grew by 16% during the past year, driven by expansions such as

→ 20

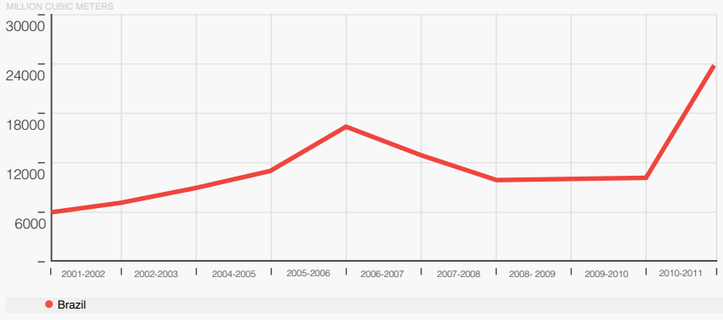
Global Natural Gas Costs 2012 ($US per Million BTUs)

Source: ACC



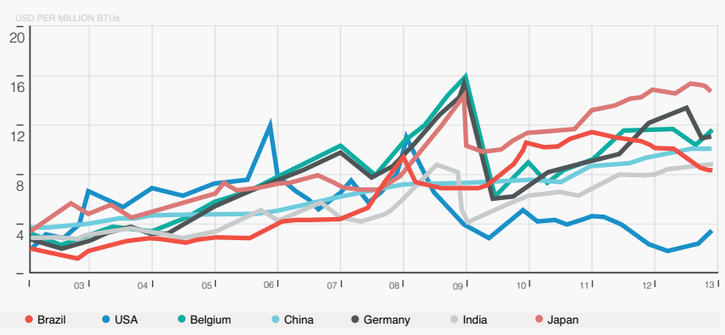
Natural Gas Production

Source: CIA World Factbook



Global Natural Gas Price Trends

Source: ACC



Natural Gas Final Consumption (2009)

Source: IEA

Final concumption	593018
Industry	440907
Transport	90047
Residential	12323
Commercial and public services	10222
Agriculture, forestry	13
Fishing	0
Other non-specified	0
Non-energy use	39506
Petrochemical feedstock	39506

INTERVIEW WITH

Pedro Roquete

COMMERCIAL DIRECTOR
PETROM

Could you provide us with an overview of Petrom's accomplishments in 2012?

Last year, Petrom launched its line of PLS Green plasticizers in Brazil, while developing its customer base within the market. Our targets were companies that had an interest in switching from the traditional, plasticizers to our green alternatives. Nowadays, widely-used plasticizers, such as Dinoctyl Phthalate (DOP), are beginning to be restricted within the European Union and the Unites States; big Brazilian export companies are adapting accordingly and that is where Petrom steps in, providing them with the PLS Green plasticizer. Moreover, legislative changes similar to the ones in the EU and the US are also occurring in Brazil, thus impacting the needs and strategies of local companies, who end up turning to our products as well.

Can you give us some data about Petrom's performances and partnerships last year?

Petrom is a medium-sized company and our revenues amounted to roughly BRL 200 million in 2012, of which about 5% was invested in R&D. We are very proud of our collaboration with Unicamp in terms of developing products and PLS Green is a prime example. Solvay, a very important player in the PVC industry made a broad study about alternative plasticizers and PLSGreen was considered one of the best alternative bio-based plasticizers in the world, which was a major achievement for us. We also received a very important award of innovation from Abiquim. Petrom has also locked in a deal with a major Brazilian shoemaker whose name we cannot disclose; this partnership is essential to us and Petrom is very optimistic about it.

How would you describe the effect the global financial crisis had on the plasticizer industry?

The first years of the global financial crisis, 2008 until 2010, were actually very positive for the Brazilian economy in general, and for its plasticizer sector in particular. At the time, Brazil was experiencing 7% GDP growth per year and production levels for plasticizers peaked in 2008/2010. However, since then, developments have not been as positive; overall, production levels in our sector have ceased to grow and we are roughly at the same capacity as we were in 2008. Even so, I am optimistic about the future and confident that 2013 will be a good year for Petrom.

What were the main reasons that caused the stagnation of the plasticizer industry in Brazil?

The stagnation of the plasticizer industry in Brazil was caused by a combination of factors, the main ones being Brazil's reduced economic activity since 2011 and the global economic uncertainty produced by the Euro crisis. Furthermore, Brazilian inventory levels for the plasticizer market, which peaked after 2010, took roughly a year to return to normal standards. Another essential factor that affected the PVC industry was Brazil's rising level of imports of final goods from countries such as China. Petrom's materials are used to produce these final goods; imports from abroad affect all companies from the entire chain of production, ranging from raw material to final good producers. These developments were further exacerbated by the overvalued exchange rate and the Brazilian authorities' decision to incentivize imports in various ports in regions such as Santa Catarina and Espirito Santo. However, these measures have now come to an end; the new middle class is on the rise and I strongly believe that Brazil has huge potential and a large untapped local market. These factors make Petrom very optimistic about the future.

What are the near-future trends for Petrom's other products?

There is a very important correlation between Petrom's activity and the infrastructure sector of the economy, as our clients produce infrastructure components such as pipelines, tubes and even windmills. Restoring high levels of investment in Brazil in the major civil construction projects will be a key factor in our activity. Meanwhile, we are getting our final approvals for PLS Green in the EU and the US. We have established a successful partnership with Proviron, a Belgian company with a very similar profile to ours, which will represent us in the European market. Furthermore, Petrom and Proviron plan on participating together to the PVC Formulation Conference in Dusseldorf in March 2013.

Could you explain Petrom's strategy to develop a green alternative to PVC plasticizers?

Developing PLS Green gave us a competitive edge in the industry at a global level. Normally, creating such a product would be a very difficult process but our task was facilitated by the fact that PLS Green's main raw materials, sugarcane and soybean oil, are widely-found commodities in Brazil. This aspect allowed us to be cost-competitive while offering a sustainable and efficient alternative to traditional plasticizers that are otherwise expensive and not always that effective. These advantages differentiate us and make Petrom's PLS Green a globally sought-after product.

What does Petrom's mid-term and long-term vision of the future look like?

Right now, we have a PLS Green patent and we are negotiating its license globally, with enhanced applicability in Europe and the US. Our current main strategy is to fully develop the European market, which Petrom believes will be essential in the future. As a company, we are aiming at a rate of growth of 25% per year during the next few years. Our partnerships make us very optimistic about the future. Our products' competitive advantages, in addition to our in-house expertise, give Petrom the confidence that our ambitious development goals will be achieved. •

17 the one in its plasticizer market. Marcos De Marchi, president of Elekeiroz, comments: "My view is that the system in operation here has its advantages and disadvantages and it is not constructive to criticize it. The simple truth is that the industry is organized in this way, with two companies (Braskem and Petrobras) acting as the main source of raw materials, and we must find the best way to operate within this structure. What the government must take into account when they decide to grant a concession to one of these two companies is whether or not the measure will have a positive impact on industry as a whole. Relying on these two is not necessarily a disadvantage in itself; if Petrobras can successfully fulfill its commitment to double production in the next five years then the chemical industry will certainly be able to consolidate its position in the world market." Indeed, the discovery of shale gas reserves in Piaui, in the northeast of the country, has revived hopes surrounding access to competitive raw materials prices, but there is still a long way to go to replicate the US's success story. Whereas in North America, the infrastructure related to pipelines and transportation was already in place, the same cannot be said about Brazil, which will need to solve this issue without impacting the final price of the raw materials. Moreover, the government's tendency to not rely on reservoir based hydroelectric power, preferring hydro, means that in times of dry-season, gas would still be used as an energy source, a fact which would divert its feedstock purpose. While non-conventional gas exploration auctions are set for November 2013, the attractiveness and feasibility of these projects for investors is still unclear. Figueiredo explains: "Pre-salt oil and shale gas have the potential to be very interesting for the chemical industry and for Brazil as a whole, not just the petrochemical industry. There are certain factors which may work against Brazil: firstly, there is a law which states that any company which has a concession to drill for shale gas must bring it to the market within two years or they will lose the concession. Faced with this situation, many private companies are reluctant to invest in the necessary infrastructure to efficiently transport the gas as they run the risk of losing the rights to their claim. There is also the environmental aspect to consider, as much of the shale gas is found at environmentally sensitive sites, and the related problem of encouraging social acceptance of drilling operations. Furthermore, the rapid rate of depletion and the elevated initial investment required to run a shale operation may put off some investors. This said, we do not expect to see any real results for another three to four years." •

Oil and Gas Industry Investments (Implemented and Forecast 2007-2014)

Source: Brazilian Trade and Investment Promotion Agency

TYPE OF VENTURE	ESTIMATED INVESTMENT (R$ BILLION)
Exploration and Production	328
Refining and Petrochemical	131,1
Fertlizer and Natural Gas	36,3
Revitalization of Shipbuilding Industry	14,2
Total	509,6

JC

INTERVIEW WITH

Juarez S. Costa & Helber Solitão

JC: PRESIDENT
HS: FINANCIAL DIRECTOR
BAERLOCHER BRAZIL

Can you detail some of Baerlocher's main milestones over the years and then bring us up to date on where the company stands today?

HS: Baerlocher is a manufacturer of additives for plastics. It was founded in 1823 in Germany and first set up operations in Brazil in 1973, making 2013 our 40th anniversary. We have always been based in São Paulo, and moved to our present site in Americana in 1986. After the 1990s we expanded as demand from civil construction and infrastructure projects grew. 2002 was a particularly important year for us as we embarked upon a series of major investments, seeking to capitalize on the newly expanding Brazilian economy. Today our company continues to manufacture and distribute over 100 specialised, customized additives for plastics and we are experts in finding exactly the right one to fit a given client's needs. PVC accounts for approximately two thirds of our business, and the remaining third is made up of additives for other polymers such as polyethylene and polypropylene, and also metallic stearates, which are sold to masterbatch producers. PVC is used for a diverse range of applications including artificial leather and electrical wire sheaths but, thanks to its durability, its main use is as piping material for the construction; we are currently world leaders in the production of additives for the stabilisation of PVC pipe. This is reflected in our client list, which includes over 200 names, the most important of which are the leading piping manufacturers and compounders.

Given that Baerlocher opened a stabilizer plant in China last year, what is the strategic importance of the Brazilian base?

JC: The Brazilian base is one of Baerlocher's most important outside Europe; although there are also bases in Peru and Argentina, we have a more complete range of products considering the complex local market. Although we import most our raw materials, all our production takes place on site so we avoid any costly import duties on the final products and between 80% and 90% of our production is destined for the domestic market. Over the last 10 years we have managed to triple our capacity through a program of expansion and investment in the latest machinery and technology from Europe, and we still have some free capacity to gather for increased demand.

In a market where price is usually the only deciding factor in choosing a supplier, how do you remain competitive?

JC: Our clients keep coming back to us for several reasons: not only are we fiercely competitive with our prices, but our products have special properties which are difficult to replicate and differentiate us from the competition. We produce a very wide range of additives making it easier for a client to buy all the chemicals he needs from us rather than waste time shopping around at different suppliers for each individual item. Further to this, our global presence means that we have a wealth of technical knowledge to draw on and our clients know that when they buy from us they are buying a product backed up by reliability, confidence, expertise and a constant level of stock that remains unaffected by bottlenecks and customs issues.

What are the main challenges hampering Baerlocher's possibilities of expansion?

JC: The main challenge for us is the same for the rest of the industry in Brazil: guaranteed access to petroleum based raw materials at competitive prices. The problem is not a lack of oil per se, in theory we extract enough to cater for domestic requirements, and the problem is that we do not have enough refineries. We are stuck with a weird situation where we are forced to export our oil, and then import derivatives, obviously at a much higher price. As a result, we are still net importers of petrochemicals and plastics when this really should not be the case given the resources at our disposal. Aside from this, we also suffer from the infrastructure issues of a poor quality road network operating far above capacity and bottlenecks in the ports, which make marine freight an unattractive option.

What direction do you see Baerlocher taking over the next five to 10 years?

JC: First and foremost Baerlocher will continue to grow and increase its market share here in Brazil, expanding its capacity and investing in new technology. However, the extent of the growth we will experience remains uncertain. All our investments over the last years have made us ready for the predicted upturn in the Brazilian economy, but we are sceptical about when this long-promised growth will begin. Last year, economic performance was disappointing across almost all sectors with GDP rising at 0.9%, only a fraction of the government's forecasts. There is a recurring problem in this country of the public sector failing to deliver on their proposals and pledges, and this has a negative impact on business. For example, the government's 'Minha Casa Minha Vida' program was supposed to guarantee the construction of 1 million new homes for low income Brazilians; as our main clients are in the construction industry this should have signalled an enormous demand for our products, but in the end only 200,000 houses were ever built. For the country to grow at the rates we were seeing a few years ago, the public sector must keep to its pledges and work with the private sector. •

INTERVIEW WITH

Marcos De Marchi

CEO
ELEKEIROZ

Elekeiroz is about to celebrate its 120th anniversary. Could you give me a brief outline of the company's history and then tell us how the company fared in 2012?

Elekeiroz has a truly historical relationship with the chemical industry in Brazil: it was founded in 1894 and started out manipulating vegetable based products to create chemicals. We became the first company in Latin America to produce sulphuric acid and from this we went from strength to strength, incorporating new products such as formaldehyde resins to our portfolio. The company was floated on the stock market in 1969 and was subsequently taken over in 1986 by Itaúsa. From this point on a series of large investments were made, the most important of which occurred in 2002 when we took control of the North-Eastern company Ciquine. Today, we define ourselves as a company that works with four distinct groups of chemicals: firstly, plasticizers and their intermediates (Octanol, Butanol, Phthalic Anhydride); secondly, Thermofix resins and their intermediates (Maleic Anhydride), Formaldehyde and UFC and finally the production of Sulphur. As for 2012, our turnover grew from 2011 to R$900m, a 16% increase, gaining 10% in the domestic market and 58% in exports. Although it was not generally a good year for the Brazilian chemical industry we experienced growth above the market rate in almost all our main sectors of operation, including an increase of 6.8% in plasticizers and 45% in other organic chemicals. The exception to this was in the production of intermediates for fertilizers where we saw growth of 4.5% compared to the market's 8.8%. However, this is not one of our core products, it is an interesting niche, but we are not planning on becoming the market leaders of this segment. Geographically, Brazil remained our core market, with 83% of our sales, while 11% went to other South American markets and the USA; the remaining 6% was divided between Europe, Asia and Africa.

In spite of 2012's relatively poor growth, the chemical industry seems optimistic. What do you think are the causes of this?

On the one hand, nationwide production of fertilizers is set to grow enormously thanks to large-scale investments from Petrobras, but this is not a sector that Elekeiroz is involved in. We are optimistic for other reasons. Looking at the future of per capita consumption of PVC and Polyethylene, there is no doubt that we will see a rise in demand as it is intrinsically linked to increasing GDP and the rapidly improving quality of life in Brazil. As people start to earn more and consume more, of everything from packaging to plastic tubing for sanitation, there will be a corresponding increase in demand for our products and in this way the industry will grow and grow. At the moment 30% of apparent consumption is sustained by imports so this leaves a lot of room for expansion within the domestic industry.

What are the main factors holding back the Brazilian chemical industry and how should they be addressed?

First and foremost the price of raw materials; we need a commitment to the provision of raw materials at guaranteed fair prices. This applies to both naphtha derivatives and gas. At the moment there is a law that states gas to be used as feedstock should be sold at a lower price than gas to be used as fuel, but unfortunately it is not enforced and the price of gas remains exorbitant. As it stands we pay $12 to $14 per BTU compared to just $3 to $4 in the USA so unsurprisingly many Brazilian companies are moving their operations abroad in order to remain competitive. Second is the cost of energy: even with the welcome fall in electricity rates brought about by President Rousseff we are still paying double what they pay in the USA. The third main setback is the high cost of transport. It currently costs more to transport our products 100 km from our São Paulo plant to Santos than it does to ship them from Santos to any port in North America. The positive aspect of these problems, however, is that they can all be fixed given the right combination of political will and money. The industry presented its suggestions to the government in the Brasil Maior Plan and they seemed to be very receptive to what we were saying, but now we must see if they will act upon our advice and how soon they can do it.

Do you believe that the problem is compounded by the particularly dominant roles played by Petrobras and Braskem in providing feedstock?

My view is that the system in operation here has its advantages and disadvantages and it is not constructive to criticize it. The simple truth is that the industry is organised in this way, with two companies acting as the main source of raw materials, and we must find the best way to operate within this structure. What the government must take into account when they decide to grant a concession to one of these companies is whether or not the measure will have a positive impact on industry as a whole. Relying on these two is not necessarily a disadvantage in itself; if Petrobras can successfully fulfil its commitment to double production in the next five years then the chemical industry will certainly be able to consolidate its position in the world market. Even without oil, the Brazilian Chemical Industry was capable of performing very well. Mexico's chemical industry, the second biggest in Latin America, is a quarter of the size of Brazil's and they enjoy much greater access to oil.

Ethanol produced from sugar cane is without doubt the raw material of choice for the chemical industry at the moment. Do you see this trend continuing?

In many ways ethanol is an excellent raw material to use, and it is abundant here in Brazil, but it has one major drawback; it is priced as a fuel not as a raw material and this brings with it a certain level of insecurity as the price can fluctuate wildly. As such, the future of ethanol as a feedstock depends heavily on the future of the oil and gas industry, if oil prices continue to increase then potentially ethanol will become commercially viable, but for now we will continue to rely mainly on fossil fuels. This said, in certain circumstances we do use raw materials derived from agricultural products, for example we currently produce a plasticizer and an unsaturated polyester resin based on natural glycerine.

What are the prospects for Elekeiroz in 2013? Do you intend to expand abroad?

For Elekeiroz, overseas expansion is not a goal in itself. Our objective is to deliver the best results possible in a sustainable manner, creating value for our stakeholders and customers, but if the right opportunity to move into other markets were to present itself then of course we would take it. In 2013 we will focus heavily on innovation and we have committed to a fourfold increase in R&D spending both internally and in collaboration with external research projects. Furthermore, we have just finished expanding our UPR production capabilities and we will start to see the results of this in 2013. •

Environment Initiatives

Turning hydrocarbons green

Sustainable solutions represent a growing trend in Brazil, and one that has already reached a scale that does the country proud. Biofuel alternatives to conventional petrochemicals are a huge business, and some of the sector's largest players are getting involved: Braskem is already running a 200,000 mt/y green polyethylene (PE) plant.

Another company that is focusing its attention on green products is Petroquimica Mogi das Cruzes (Petrom), which works in collaboration with universities such as UNICAMP. Formed in 1998, after the acquisition of Oxypar's assets, the company is the largest manufacturer of phthalic anhydride in Latin America, with a capacity of 82,000 mt/y. Petrom, which also produces maleic anhydride and fumaric acid, is specialized in phthalic and adipate plasticizers but recently, it has developed a new PVC related bio-polymer plasticizer, called PLS Green.

Pedro Roquete, commercial director of Petrom, talks about PLS Green and the reasons behind its creation: "Last year, Petrom launched its line of PLS Green plasticizers in Brazil, while developing its customer base within the market. Our targets were companies that had an interest in switching from the traditional, pollutant plasticizers to our green alternatives. Nowadays, widely-used plasticizers, such as Dinoctyl Phthalate (DOP), are beginning to be restricted within the European Union and the Unites States; big Brazilian export companies are adapting accordingly and that is where Petrom steps in; providing them with the PLS Green plasticizer. Moreover, legislative changes similar to the ones in the EU and the US are also occurring in Brazil, thus impacting the needs and strategies of local companies, who end up turning to our products as well. PLS Green is used as production material only for PVC; it is used to add flexibility to an otherwise rigid material. The resulting flexible PVC has applications in the toy-industry and in the food-contact material industry (wrapping sheets, etc.); consequently, production materials need to be very safe and PLS Green is just that."

Sustainable solutions are often associated with innovative technology, and it has been argued that Brazil's petrochemical sector lacks adequate investment in research and development. However, there are exceptions to the rule. In the green space these exceptions are most prominent, with companies such as Petrom leading the way. Another perfect example of sustainable innovation is Oxiteno.

The company, part of Ultrapar Holdings, is the largest surfactant producer in Latin America and a major ethylene oxide supplier. With 1,800 employees and 12 industrial units scattered across Brazil, Mexico, Uruguay, Venezuela and the US, Oxiteno invests about 1.5% of its yearly revenues in research and development, an arguably impressive sum compared to the 0.87% national industry average. Joao Parolin, CEO, Oxiteno said: "Oxiteno has seen increasing demand on the part of our customers for more environmentally friendly products. To that end, Oxiteno has created a program called Greenformance and the main idea is to start developing products that are eco-friendly but also have the quality to efficiently substitute their non-sustainable counterparts; this process is quite complicated and the industry has seen many attempts in which green alternatives did not rise up to the expectations. Nowadays, 20% of all of Oxiteno's raw materials are renewable. Furthermore, we have mapped all of our products and created a table that allows one to figure out the environmental impact and desired properties of our products. This table also helps Oxiteno when developing new solutions. Whereas the main question in the past was whether the product would work, nowadays we think about the whole production process, end use of the product and final disposal." •

"Sustainability and environmental responsibility are fundamental to Baerlocher's corporate philosophy, and we are constantly striving to find new ways to lessen our environmental impact. In 2002 we took the decision to start phasing out the production of heavy metals based stabilisers in favour of the more environmentally friendly calcium derived option. This was a decision we came to based upon the demands of our clients, not out of the need to comply with any environmental legislation. Initially this was a very costly proposal as it meant completely altering our production methods, however, since that time, the cost of such processes has come down, and many other manufacturers in the industry have now followed our lead. In addition to this we are currently developing our capabilities using renewable feedstock; we started building a new plant based solely on oleochemicals in 2011, construction was completed in 2012, and we expect to see operations beginning in the second half of 2013."

- Juarez S. Costa, President, Baerlocher Brazil

"Sustainability is becoming increasingly important throughout the sector, although it is sometimes a slow process to implement new policies. On the one hand, multinational corporations bring the same sustainability initiatives that they subscribe to all over the world, but equally many local Brazilian producers are very strong on environmental issues. They are under pressure to meet government sustainability guidelines, and also want to promote a good image to consumers, so there are many incentives for these companies to improve their practices. ABRAFATI's position is to create self-regulating programs, which allow companies to gradually make the transition towards sustainable methods. Over the past decade we have made great progress."

- Dilson Ferreira, CEO, Associação Brasileira dos Fabricantes de Tintas (ABRAFATI)

Environmental Agencies per State and in Federal Instance in Brazil

Source: Banco Nacional do Desenvolvimento

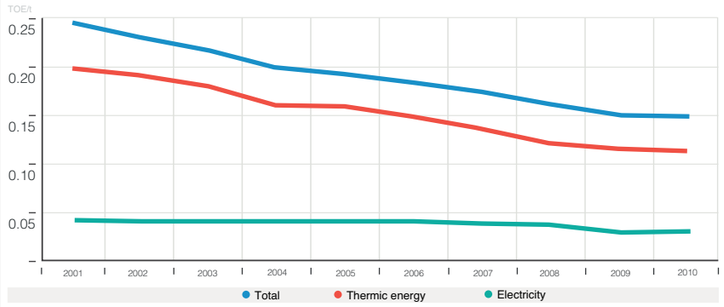
STATE		ABBREVIATION	AGENCY NAME
AC	Acre	SEIAM	Sistema Estadual de Informações Ambientais
AM	Amazonas	SDS	Secretaria de Estado de Meio Ambiente e Desenvolvimento Sustentável
RR	Roraima	FEMACT	Fundação do Meio Ambiente e Recursos Hídricos
RO	Rondonia	SEDAM	Secretaria de Desenvolvimento Ambiental
PA	Pará	SECTAM	Secretaria Executiva de Ciência, Tecnologia e Meio Ambiente
AP	Amapá	SEMA/AP	Secretaria de Estado do Meio Ambiente
MT	Mato Grosso	SEMA/MT	Secretaria de Estado do Meio Ambiente, Secretaria de Estado de Meio
MS	Mato Grosso do Sul	SEMAC	Ambiente e Recursos Hídricos do Mato Grosso do Sul
MA	Maranhao	SEMA/MA	Secretaria de Estado de Meio Ambiente e Recursos Naturais
TO	Tocantins	SEPLAM	Secretaria do Planejamento e Meio Ambiente
GO	Goiás	SEMARH/GO	Secretaria do Meio Mbiente e dos Recursos Hídricos
DF	Distrito Federal	SEMARH/DF	Secretaria de Estado de Meio Ambiente e Recursos Hídricos
MG	Minas Gerais	SEMAD	Secretaria de Estado de Meio Ambiente e Desenvolvimento Sustentável
SP	Sao Paulo	CETESB	Companhia de Tecnologia e Saneamento Ambiental
PR	Paraná	SEMA/PR	Secretaria de Estado do Meio Ambiente e Recursos Hídricos
SC	Santa Catarina	FATMA	Fundação do Meio Ambiente
RS	Rio Grande do Sul	SEMA/RS	Secretaria Estadual do Meio Ambiente
RJ	Rio de Janeiro	SEMADUR	Secretaria de Estado de Meio Ambiente e Desenvolvimento Urbano
ES	Espírito Santo	IEMA	Instituto Estadual de Meio Ambiente e Recursos Hídricos
PI	Piauí	SEMAR	Secretaria de Meio Ambiente e Recursos Naturais
CE	Ceará	SEMACE	Superintendência Estadual do Meio Ambiente
RN	Rio Grande do Norte	IDEMA	Instituto de Desenvolvimento Econômico e Meio Ambiente
PB	Paraíba	SUDEMA	Superintendência de Administração do Meio Ambiente
PE	Pernambuco	SECTMA	Secretaria de Ciência, Tecnologia e Meio Ambiente
AL	Alagoas	SEMARHN	Secretaria Executiva de Meio Ambiente, Recursos Hídricos e Naturais
SE	Sergipe	SEMA/SE	Secretaria do Meio Ambiente
BA	Bahia	SEMA/BA	Secretaria de Meio Ambiente e Recursos Hídricos
Federal Instance		IBAMA	Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis

"Oxiteno has seen increasing demand on the part of our customers for more environmentally friendly products. As a matter of fact, this trend is noticeable all throughout the supply chain: from the end consumers, to the retailers, to the producers and finally to us. To that end, Oxiteno has created a program called Greenformance and the main idea behind it is to start developing new products that are eco-friendly but also have the quality to efficiently substitute their non-sustainable counterparts; this process is quite complicated and the industry has seen many attempts in which green alternatives did not rise up to the expectations. Nowadays, 20% of all of Oxiteno's raw materials are renewable… Whereas the main question in the past was whether the product would work, nowadays we think about the whole production process, end use of the product and final disposal. More than just application and economic performance, new products have to comply with environmental and toxicological requirements. They also must have 'cleaner' production and disposal processes."

- João Parolin, CEO, Oxiteno

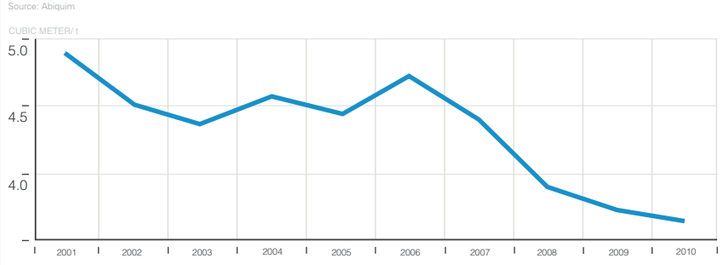
Intensity of Energy Supplies Consumption in the Chemical Industry

Source: Abiquim



Water Consumed in the Chemical Industry in Processes and Products

Source: Abiquim



INTERVIEW WITH

João Parolin

CEO
OXITENO

The year 2013 marks 40 years of existence for Oxiteno. What are some of the main milestones that the company has achieved in its recent history?

Oxiteno's first important milestone in its recent history occurred in 2003, when we acquired surfactant producers Canamex in Mexico, an event that marked the beginning of our international expansion. Canamex was a company that had many similarities to ours, from the technology that they used to their evolution in the market and thus, the integration and the transition process ended up being very smooth. It was a very good opportunity for us to start expanding in Latin America, and in the following years, Oxiteno bought some assets from Rhodia, in Mexico, assets that were then transported and integrated into Canamex's operations, increasing our production levels and the overall results of the business. Nowadays, 10 years after that initial international expansion, we are also present in Mexico, the USA, Uruguay, Argentina, Venezuela, Colombia, Belgium or even China and 37% of all our employees are based abroad; it has been an important and fast-paced transformative process, obtaining all these synergies and achieving a full integration. In the year 2012, we added to our footprint a production plant in Pasadena, Texas, a company called American Chemical in Uruguay and some assets in Suzano, Brazil. Overall, Oxiteno had a very good year in 2012 and we grew 15% in revenues and EBITDA, on a US dollar basis.

Oxiteno is among the few Brazilian companies to have such an extensive network of operations abroad. What is the relative importance of your foreign activities?

Currently, 70% of Oxiteno's revenues are obtained from the Brazilian market, while the rest of our operations account for 30%. The NAFTA market is the most active foreign region for us, followed by MERCOSUR and the Andean countries. In Venezuela we are the sole producers of polyols and nonionics, while our offices in Belgium and Shanghai have mostly commercial purposes currently. However, our Chinese branch also deals with procurement, facilitating access to raw materials from SE Asia and the Far East. In point of our market sectors, the most important ones are home and personal care, agrochemicals, paints and coatings and oil and gas. Our surfactants business accounts for more than 50% of our business, and our oxygenated solvents line also considerably contributes to our success.

Brazil is the world's fourth largest fertilizer consumer but it only produces 30% of its internal demand. How is Oxiteno positioned to leverage this opportunity within the domestic market?

Oxiteno is in a very good position in the agrochemical sector, where we have accumulated a lot of experience and where we benefit from significant research and development efforts as well as from the latest technologies in the field. The solutions we provide are tailored to customer needs, as formulations differ according to the climate and application conditions. This implies building trust and having a close collaboration with our clients, which entrust us with their formulations that we then replicate in our laboratories.

What is Oxiteno doing to take advantage of the projected growth in the Brazilian paints and coatings sector?

The Paints and Coatings sector is currently boosted by a number of factors: first, the credits that are given to the population for acquiring homes and cars are increasing, due to the fact that we are experiencing the lowest level of interest rates in Brazil in the last decades. The middle class doubled its size in the last 10 years. There are many infrastructure projects announced and let's see how fast they will become reality. Oxiteno is very well placed in the sector and we are a major producer of oxygenated solvents, which are less pollutant than aromatics. This makes these products very attractive to our customers, who demand them, seeing how they can replace aromatics in adhesives, thinners and varnishes. Oxiteno is even developing a new line of green solvents.

Home and Personal Care was identified as being Oxiteno's main market segment. How is Oxiteno acting within this sector?

Oxiteno is very active in some specific market segments as hair care, laundry detergents and skin care. Brazil is a very good testing ground for hair care products due to the diversity of ethnic backgrounds of Brazilians and consequently, innovation and research and development in the field are very good in the country. Oxiteno has a dual core platform that combines petrochemical and oleochemical components and this gives us a diversified product line and helps us develop innovative solutions to the customers.

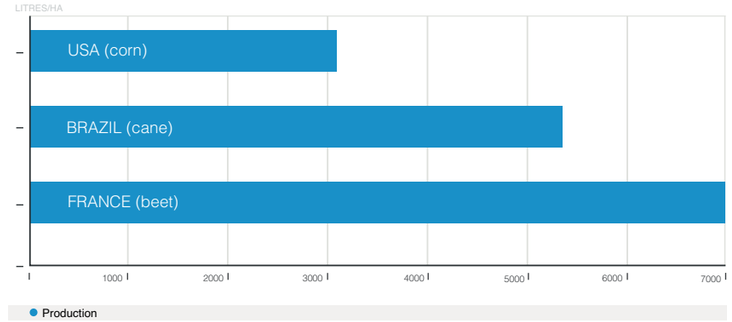
What are the main values and the core competencies that stand behind Oxiteno's success?

Oxiteno's petrochemical and oleochemical technologies constitute a very rich platform for innovation. Moreover, the access that we have to strategic raw materials, and the targeted nature of our business, that greatly focuses on surfactants and solvents, also contribute to our success in the sectors we are involved in. Finally, our commitment to expanding and developing our network in Latin America, as well as our close and trusting relationship with our customers consolidate our position as a major surfactant and solvent producer in the Americas. •

Ethanol 2G and Biochemicals

Organic Solutions

Ethanol Yields per Hectare



Brazil is the world leader in sugarcane production and ranked second (behind the USA) in ethanol output. This dominant position is partly attributable to the high cost of natural gas as an industrial raw material, which has prompted investment in alternatives. It is also due to the country's favorable climate and vast acres of arable land: with roughly 8.5 million acres of farmland used for ethanol production compared to the just under 500 million acres used for cattle ranching, the debate over food versus energy that has plagued the biofuel sector in the US and Europe is largely irrelevant: there is room for both.

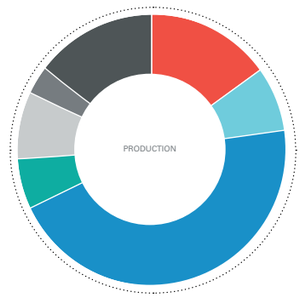
These factors are aided by progressive policies on the part of the government, which has promoted ethanol production since the mid-1970s. Today, 50% of the total automotive fleet and 90% of all new cars sold in the country have flex-fuel engines, which allow them to run on ethanol, gasoline, or a mixture of the two.

Continued development of the sector is not free from challenges. Minimum mandatory levels of ethanol in gas have changed over time and the traditional 25% quota was reduced to 18% recently due to factors that have negatively impacted an industry that had 10% annual growth between 2000 and 2008. The global financial crisis, the farmers' slight diversion of crops towards sugar to leverage high global prices, and the poor harvests of recent years have led to a shortfall of ethanol and an increase of its price, which pushed end consumers back to gasoline. Moreover, import duties in the US and the EU on Brazilian ethanol further impacted the industry and its ability to export; this led to a decrease of ethanol's share in the transport fuel market, from 55% in 2008 to 35% in 2012.

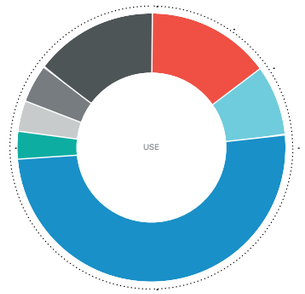
Ethanol in Brazil might have taken a punch but

Forecast Regional Distribution of Biodiesel Production and Use in 2022

Source: OECD, FAO

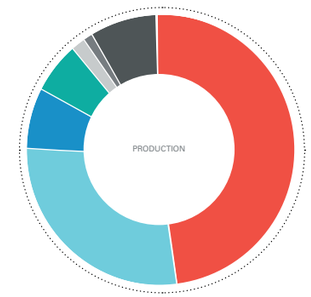


	PRODUCTION	USE
USA	15%	15%
Brazil	8%	8%
EU	45%	51%
Indonesia	6%	3%
Argentina	8%	4%
Thailand	4%	4%
Other	14%	15%

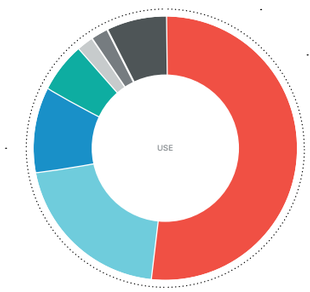


Forecast Regional Distribution of Ethanol Production and Use in 2022

Source: OECD, FAO



	PRODUCTION	USE
USA	48%	52%
Brazil	28%	21%
EU	7%	10%
China	6%	6%
India	2%	2%
Thailand	1%	1%
Other	8%	8%



the fight is far from over; traditionally, innovation and R&D in the field have benefited from important investments and the state-owned company of EMBRAPA, alongside academic institutions in the country, has been a major innovator in biotechnology and agricultural best practices. Sugarcane yields have seen a threefold efficiency increase in just three decades, performance that drove ethanol production to higher volumes as well. Continuing this innovative approach and its historic commitment to ethanol, the Brazilian government has recently adopted a plan aimed at reviving the industry through a structured framework that encourages technological breakthroughs in the country's sugar-based energy and chemical sectors; its name: PAISS.

PAISS is a joint initiative between The Brazilian Development Bank (BNDES) and the Research and Project Financier (FINEP) that devotes BRL 1 billion between 2011 and 2014 for developing and commercializing new technologies designed for processing sugarcane biomass. Brazilian authorities claim that now, through PAISS, the country's investment in innovation in the sector reaches similar levels to those in the US and EU. The three elements supported by the program are second-generation ethanol, new sugarcane products and gasification processes and technologies in the field. The selection of the eligible business plans has already been conducted and 25 companies were chosen to be financed by BNDES, FINEP, or both, depending on specific project characteristics, with equity interest on the part of BNDESPAR (BNDES's holding) also as an option.

GranBio, a 100% Brazilian company, was founded in June 2011 and has the ambition to establish itself as the largest producer of second-generation ethanol in the world, aiming to produce 1 billion liters of the biofuel by 2020. In addition to this objective, GranBio is also set to prove to the world that its platform is feasible for biochemical production, as Alan Hiltner, executive vice-president of GranBio, explains: "Ethanol brings profits but our end goal is to leverage this cellulosic ethanol production to show the world that the hydrolysis and the quality of the sugars associated with it are good enough for the biochemical industry as well. GranBio will be looking to produce chemicals that do not require first generation sugars, that Brazil has a deficit in, for chemicals for which there are big consolidated markets in the world already ($3 billion to $4 billion)."

GranBio's ambitious plans attracted the interest of BNDES and PAISS, as Hiltner notes: "By proving that we could achieve a 45% increase in productivity by utilizing current leftover materials without using more land, growing more sugarcane, or changing the structure of the crops, GranBio was chosen by PAISS to be funded with 300 million BRL ($128.4 million) for its first 82 million liter cellulosic plant in Alagoas. Furthermore, BNDES recently acquired 15% of our company in equity, for a total value of 600 million BRL ($256.9 million)."

Technological innovation is essential to Granbio's success, and to that end, the company entered in partnership with other organizations, such as M&G, Novozymes, and DSM in order to find and refine the best technologies currently available on the market: "GranBio is creating a new type of feedstock in Brazil, called Cana Vertix. We acquired numerous germplasms from various countries such as the US, Brazil and Barbados in order to create this new special cane, one that would allow us to have increased levels of biomass and fibers compared to regular sugarcane," said Hiltner.

Founded in 2003 in San Francisco, one of the strongest global biotechnological centers, Solazyme offers an innovative biotech platform based on oil-producing abilities of microalgae, which create the substance in order to accumulate energy. Solazyme's presence in Brazil took the form of a joint venture with Bunge, called Solazyme Bunge Renewable Oils, which will benefit from a commercial-scale renewable oil plant, constructed adjacent to Bunge's Moema sugarcane mill in Sao Paolo. The factory, with a planned production capacity of 300,000 mt/y of oil by 2016, was awarded 245 million BRL ($104.9 million) by the PAISS program. The end products of Solazyme Bunge Renewable Oils will target oleochemical and fuel applications as well as food products that will be commercialized within the Brazilian domestic market. Walfredo Linhares, general manager of Solazyme in Brazil, comments: "An aspect that will be interesting for us locally is the speed with which the Brazilian business environment will completely accept our innovative solutions. The problem is that other regions of the world such as the USA or Europe are more open to these new products, while in Brazil, we need to spend more time educating the market regarding new processes. Another issue related to the specificities of the Brazilian environment is the disconnect between the research and science world and the business environment; academics are kept too much at a theoretical level and not enough effort is put into transferring ideas and innovation into the practical, commercial realm."

Amyris is another business with San Francisco roots, and the company was initially funded by the Bill and Melinda Gates Foundation to synthesize artemisinin, a naturally-occurring hydrocarbon and an effective malaria treatment. After successfully synthesizing this drug, Amyris realized that it could use a similar process to produce renewable diesel, and then specialty chemicals. In early 2013, the company opened its first production plant in Brazil, which received BNDES financing of 22 million BRL ($9.4 million). Amyris has already attracted international market attention and is preparing for various partnerships, as Adilson Liebsch, commercial manager, Amyris Brazil, explains: "Our biofuel business is going to be transferred to a joint venture with French multinational Total; they will not just be investors, but partners in the process from production to distribution. They have previously shown interest in ethanol as a fuel, and they now value our diesel be- cause there is no need to modify engines or lose performance. It is a drop-in product and can therefore be used in regular diesel engines, so there is no need for costly fleet modification, and all existing downstream infrastructure can continue to be employed. A second joint venture is planned with Kuraray in Japan to develop liquid farnesene rubber to use as an additive for tires that will reduce rolling resistance and increase fuel efficiency for cars. Finally, we are transferring our lubricants division to a joint venture with Cosan to make a company called Novvi. This will be a separate enterprise tasked with developing and commercializing our base oil and finished lubricants."

Governmental programs such as PAISS will help the ethanol industry in Brazil develop through innovation and by optimizing the already impressive biomass and arable land potential that the country has. Looking beyond ethanol however, companies like GranBio, Solazyme and Amyris aim to use their biotechnological platforms to open doors in a market with far higher margins: specialty chemicals used in cosmetics, food products and oleochemicals. •

INTERVIEW WITH

Adilson Liebsch

COMMERCIAL MANAGER
AMYRIS

Can you provide us with a rundown of the main milestones in Amyris' history?

Amyris was born out of a non-profit project to synthesize Artemisinin, a naturally-occurring hydrocarbon that works as an effective malaria treatment. In 2005, Amyris received a grant, funded by the Bill and Melinda Gates Foundation, to develop a way to convert plant sugars into Artemisinic Acid, a precursor of the powerful malaria drug ingredient. With this success came the realization we could use a similar process to produce a wide range of different hydrocarbons using plant sugars as a feedstock. A few years later, we received our first round of investment from venture capitalists to produce renewable fuels and specialty chemicals. Amyris went public in 2010 and in 2011 began production of Biofene®, Amyris's brand of renewable farnesene, using CMOs in the USA, Spain, and Brazil. We began production our first industrial-scale, purpose-built production plant in Brazil in December 2012 and we have plans for others plants as well, such as the joint venture with major sugarcane producer São Martinho.

How versatile is the production method?

The process is based on using yeast to convert plant sugars into hydrocarbons, so it is very versatile. At the moment we are focused on sugarcane as our principal raw material for its availability, price and sustainability, but we have shown our process works with corn dextrose, sugar beets and other fermentable sugars (C6). At that lab and pilot scale, we have been successful in also using cellulosic sugars (C5) as feedstock for our process. This would give us enormous potential to expand the range of feedstocks around the world.

What are the main markets and applications for Biofene™, Amyris' brand of renewable farnesene?

Amyris is currently focusing on six different uses for Biofene: Fuels, Lubricants, Polymers, Home & Personal Care, Cosmetics and Flavors & Fragrances. The first product from Biofene to hit the market was squalane, an emollient used in cosmetic products that was previously derived from unsustainable sources – shark livers or ultra-refined olive oils. We are growing our market share and already have arrangements with distributors in United States, Europe, Asia, and Brazil. The Brazilian cosmetics market is on track to become the third largest in the world and is seeing growth of some 8% to 10% per year, so we have high hopes for developing squalane sales here. This said, our company ethos is based on sustainability, and our main focus is on providing environmentally friendly fuels in areas where they can really have an impact on pollution reduction, such as for metropolitan buses in São Paulo and Rio de Janeiro. There is the potential for it to be used to fuel a Bus rapid transit (BRT) system in these cities too. Both cities need to develop their transportation networks, and by using our fuels they can reduce emissions by up to 30%, so it is a smart investment in the future. We are also developing Biofene for use in jet fuel; at the moment we are still in the certification stage, but we hope to be powering planes by the time the 2014 World Cup begins.

Amyris is attracting a lot of attention from outside investors. Could you explain some of the joint ventures you have in the pipeline?

Our biofuel business is going to be transferred to a joint venture with French multinational Total; they will not just be investors, but partners in the whole process from production to distribution. In such a massive, well-established market Total brings the in-depth knowledge and vast capital needed to successfully upscale. They have previously shown interest in ethanol as a fuel, but they recognise that our renewable diesel is a better product because there is no need to modify engines or lose performance. It is a drop-in product and can therefore be used in a regular diesel engine, meaning that there is no need for costly fleet modification, and all existing downstream infrastructure can continue to be used. Another joint venture we have established is in the lubricants and base oils space. We have moved our lubricants division into a joint venture with Cosan to make a new company known as Novvi. This is a separate enterprise tasked with developing, producing, and commercializing our base oil and finished lubricants using Biofene as the raw material. There are many other partners. For instance, we have a partnership with Kuraray in Japan to develop liquid farnesene rubber to use as an additive for tires that will reduce rolling resistance and increase fuel efficiency for cars. In the F&F space we have collaborations agreements with the leading players to leverage our synthetic biology to produce targeted molecules.

What does the future look like for Amyris?

We have established important partnerships with sugarcane producers in the country, and want to help the sugarcane industry expand its portfolio away from just sugar and ethanol production. With our products the sugarcane industry can potentially benefit from all the options available to the petrochemical industry. This should bring about the possibility of more products with higher added value, such as specialty chemicals, and therefore give higher margins to producers. Speaking more generally, we will continue to be leaders in innovation in a wide variety of renewable chemicals, not only in terms of technological research, but in terms of the manufacturing and marketing of new products. We have been fortunate to count of the Brazilian government's support, whether in terms of reasonable biotech regulations but also in terms of making adjustments to fuels policies to incentivize innovative clean products such as the ones we offer. We are optimistic about the future. •

INTERVIEW WITH

Alan Hiltner

EXECUTIVE VICE-PRESIDENT
GRANBIO

GranBio is an innovative project that has been getting a lot of attention in the past year. Could you tell us more about your organization's main milestones and its structure?

The idea behind GranBio was to find the optimal solution for the biotechnology industry in Brazil and to do that, our management was first in touch with a leading scientific figure in the field, Mr. Goncalo Amarante Pereira. We concluded that the best model to pursue was the one in which we would integrate the whole value chain in our business, from feedstock to the end chemicals. To that purpose, we established GranBio, which was based on four different companies that represented its main pillars.

The first was BioVertis, which is an organization responsible for the development of a new feedstock in Brazil, called Cana Vertix; it is also in charge of creating solutions for the collection and handling of the straws from the local regular sugarcane plants. We acquired numerous germplasms from various countries such as the US, Brazil and Barbados in order to create this new special cane, one that would allow us to have increased levels of biomass and fibers compared to regular sugarcane. The second company we established is called BioEdge and its mission is to create the industrial processing and conversion of the feedstock, be it the one we collect or the one that we produce ourselves. The partnerships GranBio established with technology providers also represented very important milestones, as our integrated solution is based on three elements: the pre-treatment process (Chemtex), the enzyme component (Novozymes) and the yeast that converts the cellulosic sugar to ethanol (DSM); GranBio also achieved partnering with the first generation mills in Brazil to recover the straw from their cane fields, thus improving our efficiency. Our first cellulosic plant will subsequently integrate all these technologies and factors, making it the first of its kind in the Southern Hemisphere. The third company, a bio cluster, is called Bio-Plant and it is not a stand-alone solution; the idea is to create a feedstock central not only for the biomass but also for the C5 and C6 streams, which serve as the main feedstock for chemicals and ethanol. This will incorporate a large pretreatment facility for cellulosic sugar streams for bio-chemicals and biofuel plants, all within the same site, sharing utilities. The fourth company, called BioCelere, was created for the purpose of biotechnological development, with a focus on yeast strains; it benefits from a large laboratory in Campinas, where we united efforts with UNICAMP University.

GranBio was chosen to be one of the 25 projects funded by the governmental PAISS program. What can you tell us about that and the concept of second-generation ethanol?

The PAISS program started in mid-2011 and it is the first structured attempt in Brazil to deal with innovation and funding for the sucrochemical industry, whether we are talking about traditional sugarcane mills, or projects like GranBio. By proving that we can achieve a 45% increase in productivity by utilizing current leftover materials without using more land, growing more sugarcane, or changing the structure of the crops, GranBio was chosen to be funded with 300 million BRL for its first cellulosic plant. Furthermore, BNDES recently acquired 15% of our company in equity, for a total value of 600 million BRL. Ethanol 2G has the same proprieties as first generation ethanol and the chemical composition of the two is identic. The difference comes from the fact that overall, we can produce ethanol 2G cheaper: although the capital expenditure for a cellulosic facility is 25% to 30% more than for a traditional one, the operating expenses are 20% less. This leads to a cost advantage that we plan on leveraging.

What will GranBio's final project look like, after all the investments will be done?

GranBio's goal is to produce one billion liters of ethanol by 2020 and the current plant, BioFlex, which is in construction, has a capacity of 82 million liters so our operations will require many more plants to be built in the next seven years. The ethanol will be sold mainly in Brazil, but we do not exclude commercializing it in Europe and the US as well, where prices are more advantageous for us. Another component of our business is the biochemical one; ethanol brings profits but our end goal is to leverage this cellulosic ethanol production to show the world that the hydrolysis and the quality of the sugars associated with it are good enough for the biochemical industry as well. GranBio will be looking to produce chemicals that do not require first generation sugars, that Brazil has a deficit in, chemicals for which there are big consolidated markets in the world already ($ 3 billion to $4 billion).

What are GranBio's main values and core competencies and what is your vision for the future of the company?

There are six pillars that constitute the base for GranBio's strategy: competitive feedstock, optimal industrial solutions that come from integrating efficient technologies, execution excellence (our group constructs its own facilities), talented people, solid capital structure and finally, the quality of our partnerships. GranBio's vision is to become the largest second-generation ethanol provider in the world. Additionally, by integrating our access to feedstock, our solid capital structure and our revolutionary technologies, GranBio hopes to become the world's preferred platform for biochemical production globally. •

Biotechnological Innovation in Brazil

The revival of a sweet, sugary story

Sugarcane ranks at the very top of planet Earth's crops, with more than 90 countries cultivating a total area of roughly 24 million hectares, a size equivalent to the entire area of the UK. Almost a third of the 1.7 billion tons of harvest that are collected annually are grown in Brazil (559 million tons in 2012), which still reigns as the undisputed champion in sugarcane production globally, despite the unfavorable weather conditions that have affected its crops in the last two years (severe rains in 2011 and drought in 2012).

Yet Brazil's rather linear sugarcane story suddenly encounters a twist when the majority of the country's sugarcane harvest is not actually used for sugar itself, but rather for sugarcane ethanol production. The South-American powerhouse holds, along with the US (which uses corn as a raw material), the top spot for global ethanol production. Together, these two countries are responsible for approximately 85% of worldwide output of ethanol. Even though the US dominates the market due to the higher yields, the better energy efficiency and the overall lower costs of sugarcane ethanol gives Brazil the competitive edge in terms of the final product.

Brazil's pro-ethanol policies date back to mid-1970s when the government started to look for alternatives to fossil fuels. Today, 50% of the total automotive fleet and 90% of all new cars sold in the country have flex-fuel engines, which essentially allow them to run on ethanol, gasoline, or a mixture or the two. Minimum governmental mandatory levels of ethanol in gas have changed over the years and the traditional 25% quota was reduced to 18% in recent years due a series of factors that have negatively impacted an industry that had seen a yearly 10% growth between 2000 and 2008. The global financial crisis, the farmers' slight diversion of crops towards sugar to leverage its high global prices, and the poor harvests of recent years have all led to a shortfall of ethanol and an increase of its pump price, pushing the end consumers back to gasoline. Moreover, import duties in the US and in the EU on Brazilian ethanol further impacted the industry and its ability to export. Overall, this led to a decrease of ethanol's share in the transport fuel market, from 55% in 2008 to 35% in 2012.

Ethanol in Brazil might have taken a punch but the fight is far from over; traditionally, innovation and R&D in the field have benefited from important investments and the state-owned company of EMBRAPA, alongside academic institutions in the country, has been a major innovator in biotechnology and agricultural best practices. Sugarcane yields have seen a threefold efficiency increase in just three decades, performance that drove ethanol production to higher volumes as well. Continuing this innovative approach and its historic commitment to ethanol, the Brazilian government has recently adopted a plan aimed at reviving the industry through a structured framework that encourages technological breakthroughs in the country's sugar-based energy and chemical sectors. Its name: the Joint Plan for Supporting Industrial Technological Innovation in the Sugar-based Energy and Chemical Sectors (PAISS).

A joint initiative signed in 2011 between The Brazilian Development Bank (BNDES) and The Research and Project Financier (Finep), the program will receive BRL 1 billion between 2011 and 2014 for developing, producing and commercializing new industrial technologies designed for processing sugarcane biomass. Brazilian authorities claim that now, through PAISS, the country's investment levels in innovation in the sector reach similar levels to those of the US and the EU. The three main elements supported by the program are second-generation ethanol, new sugarcane products and gasification processes and technologies in the field. The selection process of the eligible business plans has already been conducted and 25 companies were chosen to be financed by BNDES, Finep, or both, depending on specific project characteristics. In addition to this, equity interest on the part of BNDESPAR (BNDES's holding) was also offered as an option. Among these 25 companies: GranBio and Solazyme.

Granbio, a 100% Brazilian company, which was founded in June 2011, has the ambition to establish itself as the largest producer of second-generation ethanol in the world, and to that end, it is aiming to produce 1 billion liters of the biofuel by 2020. In addition to this objective, GranBio is also set to prove to the world that the processes and the quality of the sugars they will be using for cellulosic ethanol production are good enough for the biochemical industry. By doing this, the company hopes to become the world's preferred platform for biochemical products and GranBio is already eyeing mature specialty chemicals markets all over the world. The organization has established alliances with first-generation plants that will assure the supply of raw materials while unused sugarcane straw and sugarcane bagasse will also be used to produce ethanol; GranBio estimates that with these methods, production of ethanol per hectare will grow by 45% in Brazil, without increasing land-use and without a tradeoff between the final products of the crop, sugar and ethanol.

In order to succeed where others failed, GranBio's business model required careful planning and a very selective process of the optimal currently available technologies in the world. The company's structure includes four organizations, each responsible with a different task. BioVertis is in charge with creating a new type of feedstock, called energy cane, BioEdge is responsible with the creation of industrial processing and conversion of the feedstock, BioPlant, which is a bio cluster, serves as a feedstock central and finally, BioCelere has a biotechnological development role, with an emphasis on creating yeast strains. Furthermore, in order to have the technological edge on its side, GranBio signed several partnerships with leading companies in enzyme solutions (Novozymes), pre-treatment processes (Chemtex, part of M&G Group) and yeast strains (DSM). Proof to the potential of GranBio's project, BNDESPAR invested BRL 600 million in the company, thus acquiring 15% of its shares and PAISS financed the company's first 82 million liter capacity cellulosic plant in Alagoas with BRL 300 million.

Founded in the year 2003 in South San Francisco, one of the strongest biotechnological centers in the world, Solazyme is a company that offers an innovative industrial biotech platform based on the oil-producing abilities of microalgae, which naturally produce the substance in order to accumulate energy, as part of their survival mechanism. Solazyme's research team was able to augment the natural 10% oil concentration in microalgae to an impressive 80%, while also discovering two other important elements during the process. The first one was named alguronic-acid, a substance for which Solazyme subsequently found extensive applications in skincare products and the other was represented by the microalgae's rich proteins and polysaccharides, which have great nutritional value. Solazyme's biotechnological platform is feedstock flexible and to that end, the company can utilize a wide variety of plant-based sugars, such as sugarcane-based sucrose, corn-based dextrose, and sugar from other biomass sources and taking this into account, establishing a strong presence in Brazil was an obvious choice.

Solazyme's presence in the South-American country took the form of a joint venture with Bunge, called Solazyme Bunge Renewable Oils, which will benefit from a commercial-scale renewable oil production facility, constructed adjacent to Bunge's Moema sugarcane mill in Sao Paolo. The factory, which should reach an annual production capacity of 300,000 metric tons of oil by 2016, was awarded BRL 245 million by the BNDES within the PAISS program. The end products of Solazyme Bunge Renewable Oils will target oleo-chemical and fuel applications as well as food products that will be commercialized within the Brazilian domestic market. In respect to the feasibility of Solazyme's products, it is enough to mention that the company's alternative for jet fuel, Solajet, was used in the first non-test commercial flight in the US to incorporate both regular and sustainable fuels, on board a Boeing 737-824 from Houston to Chicago; it is relevant to mention that the passengers of the flight paid regular ticket fares and were aware of the mixture of the two fuels: and everyone made it to Windy City safe and sound.

Provisional results and predictions for this year's sugarcane crops are already very optimistic in Brazil and this factor alone will boost the ethanol market once again in the South-American country. Combining this with increasing global demand for sustainable, non-pollutant and renewable sources of energy, one can see that the future of ethanol worldwide still looks very promising. Governmental policies and programs such as PAISS will not only help the ethanol industry in Brazil develop, but they will do so through innovation and by optimizing the already impressive biomass and arable land potential that the country has.

However, looking beyond ethanol, companies like GranBio and Solazyme are aiming to use their biotechnological platforms to open new doors in a market with far higher margins: chemical specialties used in cosmetics, food products or oleochemicals, to name a few. And if we are to analyze Brazil's $ 29 billion import deficit in 2012 within its chemical industry, we will see that a lot of that has to do with specialty chemicals of high-added value, an area in which Brazilian producers are not keeping the pace with leading global players. In trying to help its national ethanol industry, Brazil might have done itself a bigger favor than it initially though: gaining competitiveness in the weakest link of its chemical industry. •

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Industry Explorations

Innovation for Growing Needs:
Specialty Chemicals in Brazil

"The fact that BASF has operated in Brazil for over a century shows how strategic the country is to the company at global level. In Brazil we have around 4,500 employees; 10 productive units and approximately €2.7 billion in sales. As a characteristic of the region, Brazil also stands out as the most relevant country. Currently, there are two sectors with a strong influence in our business: agriculture and civil construction. Our laboratories are local, enabling our research and development to be done in the country according to the market demand. This enables us to pick up quickly new trends and develop specific products with high degree of creativity."

- Alfred Hackenberger, President South America, BASF

Courtesy of Elekeiroz

Paints and Coatings

The Color of Success

The clichéd but nonetheless true perception of Brazil is of a land of color: a perception helped by the country's distinctive flag and the images of the vibrant Carnival. The size of its paints and coatings industry – the fifth largest in the world and worth $4.3 billion in 2012 sales – should therefore not come as a surprise.

Yet after substantial and sustained growth since 2006, Brazil's paints and coatings industry did not perform as well as expected in 2012. As Dilson Ferreira, CEO of ABRAFATI, the Brazilian Association of Paint Producers, explains: "2012 was a flat year for the paints industry with mediocre results. Although we saw a 10% growth in sales in local currency, this translated to a 5% drop when converted to US dollars because of the Real's depreciation."

Despite this, developments in the civil construction, infrastructure and automotive industries should allow it to grow well in the future. "Now, we are more optimistic about the future because the main sectors reliant on paints will grow significantly," says Derreira. "Construction and energy works will have a huge impact on paints and coatings because heavy oil and gas infrastructure requires hi-tech, high-margin paints for adverse weather protection. We are also seeing large-scale roads and railroads infrastructure developments and the expansion of the port system. The third big driver of growth will be the automotive industry, which always had a privileged status in Brazil, often receiving tax breaks, low interest rates, and free land for factories."

In the upstream segment of the market, BASF, through its record $500 million investment in the acrylic acid, butyl acrylate and superabsorbents plant in Camacari, will raise the supply of raw materials for the coatings industry: "BASF will start to produce 2-ethyl-hexyl acrylate, an important raw material for the adhesives and special coatings industries, in its existing chemical complex at Guaratinguetá, São Paulo; this will be the first plant for this product in South America," said Alfred Hackenberger, president of BASF for South America.

The decorative paints market in Brazil, which numbers over 500 producers, is regionally dispersed, but the majority of the production comes from players such as BASF's Suvinil, AkzoNobel's Coral, PPG and Sherwin Williams. Dilson Ferreira discusses the balance of power in the industry: "There are approximately 75 important businesses in the sector and ABRAFATI's membership numbers 30 companies that roughly account for 80% to 85% of the market, so it is a fairly concentrated business environment."

Brazil has a housing deficit of 6 million and official plans are to build 23 million houses before 2022. "Minha Casa, Minha Vida" is a governmental civil construction program that has the potential to generate 2% annual growth for the paints and coatings industry by supplying 3 million affordable houses to low-income families until 2014, mainly in the north and northeast of the country. Roque Antunes, director at Transcor, a Brazilian company founded in 1994 which focuses on pigments and dyes, talks about the program and the impact on Transcor's business: "The architectural market is the most significant one for Transcor, and to that end, the Minha Casa, Minha Vida program is very important to our business. All the big decorative paint manufacturers are using dispersions in their products, which will be the main paints used in the program and we can leverage this, seeing how all our dispersions are internally produced."

Nonetheless, plans on paper are not always applied and Juarez Costa, president of Baerlocher Brazil, a player involved in the construction market through its PVC tube additives, discusses the initial overall progress of "Minha Casa, Minha Vida": "The government's 'Minha Casa Minha Vida' program was supposed to guarantee the construction of between 1 million new homes for low income Brazilians until the end of 2011; as our main clients are in the construction industry this should have signaled an enormous demand for our products, but in the end only 200,000 houses were ever built. For the country to grow at the rates we were seeing a few years ago, the public sector must keep to its pledges and work with the private sector."

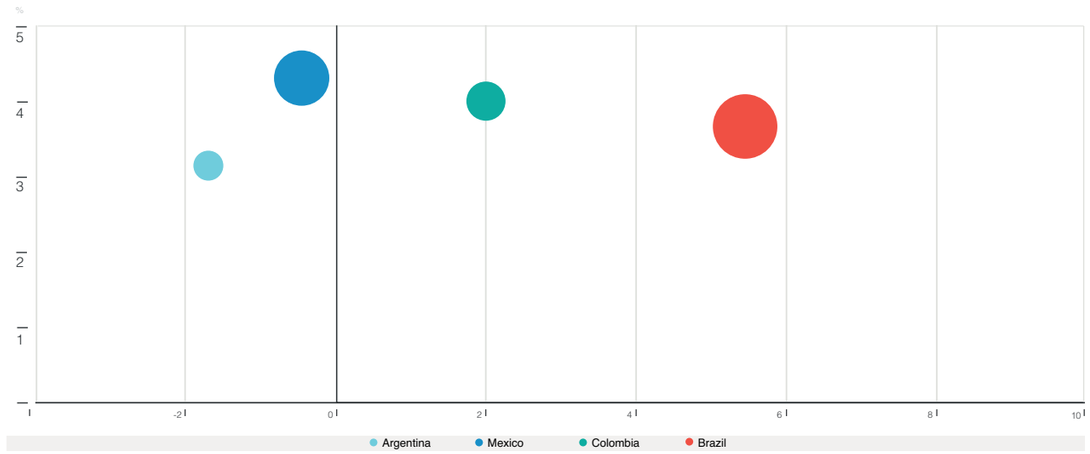
The boom in Brazil's civil construction also comes with concern for the quality and the environmental-friendly proprieties of the paints involved. With insufficient governmental regulation in the field, quality control has been assumed by ABRAFATI and the private sector players in the market. Pedro Medeiros, general manager for South and Central America for Arkema Coatex, a dispersant and thickener business, part of French giant Arkema's new Coatings and Resins business unit, elaborates: "Brazil is ranked among the world's top five paints industries but the quality of the products here is much lower than in the US and EU. The end consumer is primordially preoccupied with the price of the product and not its environmental impact or quality. The Brazilian government has been very slow in adopting appropriate legislation and regulations in the sec- tor. These are actually implemented by ABRAFATI that classifies paints in three categories: economic, standard and premium. ABRAFATI reserves the right to purchase samples from retailers and verify if the specified standards are actually met. These kinds of initiatives will eventually drive the market's willingness to pay the extra price for the extra quality."

Joao Parolin of Oxiteno identifies other factors that contribute to the sector's growth: "The credits that are given to the population for acquiring homes and cars are increasing, due to the fact that we are seeing the lowest interest rates in Brazil in the last decades. There are many infrastructure projects announced and let us

39

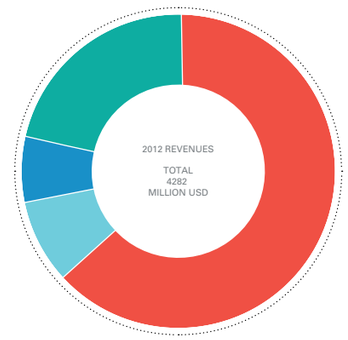
Latin American Paints and Coatings Market Dynamics by Value

Source: Timetric Analysis



Paints and Coatings Sales by Industry (in million liters)

Source: Abrafati

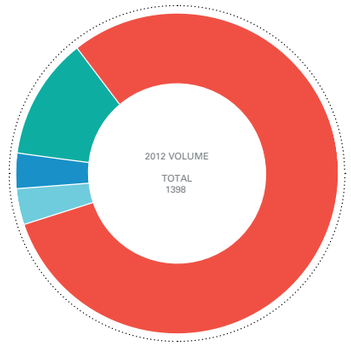


Architectural	2728
Refinishing	355
Automotive Industry	281
General Industry	919

Paints and Coatings Consumption by Industry (in Million Liters)

Source: Abrafati

Architectural	1119
Refinishing	55
Automotive Industry	46
General Industry	176



4.28

BILLION USD

Total Revenues in 2012

Source: Abrafati

Global Coating Consumption (billion lbs)

Source: Kusumgar, Nerlfi & Growney

REGION	2009	2012	%AGR, 09-11
Asia - Pacific	23.3	28.5	7
Europe	17.2	18.5	3
North America	12.3	13.6	4
South and Central America	4.4	5.1	5
Rest of World	1.5	1.7	5
Total	58.7	67.4	5

INTERVIEW WITH

Dilson Ferreira

EXECUTIVE PRESIDENT
ASSOCIAÇÃO BRASILEIRA DOS FABRICANTES DE TINTAS (ABRAFATI)

2012 was not a very good year for the Brazilian industry that experienced a GDP growth of only 0.9%. How did the paints and coatings sector fare in this environment?

2012 was a flat year for the paints industry with truly mediocre results. Although we saw a 10% growth in sales in local currency, this translated to a 5% drop when converted to US dollars because the Real's value fell so much between 2011 and 2012. On the other hand, unlike the rest of the chemicals industry, the paints and coatings sector has not built up any significant trade deficit; in fact, imports and exports made up less than 5% of total sales. Now that 2012 is over, we can afford to be more optimistic about the future because the main sectors to which we sell paints are set to grow significantly.

What do you believe will be the main driver of growth for the paints and coatings sector?

The most important industry for ABRAFATI's members is the housing industry. Between 2010 and 2022 there are plans to build 23 million new houses. The demand for these houses will come mainly from the rise in new families, which are increasing above the rate of population growth thanks to the modern trend towards smaller families and the increasing number of divorces. There is also need to solve the current housing deficit of 6 million that we are seeing today, and the rest will be made to replace existing structures that have deteriorated so much that they can no longer be considered safe for habitation. Many of these houses will be built by the public sector through schemes such as the Minha Casa Minha Vida program, which aims to provide affordable housing to low-income families, but many more will be financed by the private sector. An increasing number of Brazilians are now able to buy their own homes thanks to the fall in unemployment and consequent rise in spending power, and also because our interest rates have decreased so much, though they still remain high when compared with the rest of the world. One house requires approximately 50 liters of paint; this might not seem like such a large amount, but when you consider the sheer volume of construction that is being undertaken and multiply 50 liters by several million houses, the prospects become very interesting for our industry.

What other factors will be important to spur growth in the sector?

Infrastructure construction will certainly have a huge impact on paints and coatings. As Brazil is growing so fast, there is an ever-increasing need for energy. Much of this energy comes from oil, and so there is ongoing investment in heavy oil and gas infrastructure, such as offshore rigs, tankers, and pipelines, all of which require hi-tech paints with high added value to help them withstand the adverse weather conditions in which they operate. Aside from this, there is also development of alternative energy sources like hydroelectric dams and windfarms, and they too rely on high performance coatings to stand up to the elements. In addition to this we are seeing enormous projects being carried out to develop transport infrastructure in the form of new roads and railroads, and the expansion of the existing port system. The third big driver of growth will be the automotive industry, which has always held a favored position in the Brazilian economy, often receiving tax breaks, special low interest rates, and free land for production plants. In 2013 we are already seeing two Chinese manufacturing plants and a new Hyundai plant being built, as well as expansion of Toyota and Honda's existing operations. Automotive applications also require high performance paints that carry high added value, so we are excited to see such strong development in the industry.

Could you give us a breakdown of the market? How is ABRAFATI's membership made up?

It is difficult to say exactly how many small paints companies there are in Brazil because there are so many informal operations running, and they have nothing to do with the association. We can say that there are approximately 75 companies that are of real importance to the market, and amongst these we have a wide range of different sized enterprises. Our membership numbers 30 companies, and we believe that these 30 account for between 80% and 85% of the market, so it is a fairly concentrated business environment. We are expecting to see a trend towards higher concentration as the big players such as Coral (AkzoNobel) and Sherwin Williams move to take over smaller family-owned companies. On the other hand, we may see the entrance of some new players from abroad who want to set up shop in Brazil now the economy is set to get back on its feet.

What are your predictions for the future of the paints and coatings industry in Brazil?

Our overall target is that the sector grows by 3% in 2013, and given the predicted rise in the industries that we supply, this still seems realistic. Speaking more generally, we expect to see some activity from major companies not yet present in Brazil who want a piece of the market, we expect to see activity from companies who are already here but have room to expand, and we expect to see a number of smaller companies who are prepared to sell their business taken over. On a governmental level, we would like to see a decrease in import taxes for some materials. Although these high duties were introduced to help domestic producers, the end result has been to make products that are not even produced in Brazil prohibitively expensive for manufacturers and for consumers alike. •

see how fast they will become reality. Oxiteno is very well placed in the sector and we are a major producer of oxygenated solvents, which are less pollutant than aromatics and can replace them in adhesives, thinners and varnishes; we are even developing a new line of green solvents."

The upcoming events of the World Cup of 2014 and Rio Olympics of 2016 have also created opportunities for coatings providers in Brazil. Jaap De Jong, regional director of Latin America at AkzoNobel, explains: "We have secured six contracts for stadiums in Brazil, five of which will be in the FIFA World Cup (Maracana, Brasilia, Corinthians, Pernambuco, Beira-Rio). AkzoNobel will be assuring exterior protective coatings and some interior design coatings for them and we are also competing for Olympic Games related projects."

While commodities such as binders have an established national production in Brazil, the same cannot be said about the supply of high-margin additives, pigments and dyes. "BYK deals with highly specialized fine chemicals, which are a very scarce locally-produced resource in Brazil. Trade deficits that are based on commodities, which are plentiful in Brazil, are indeed a problem, as the local market could be successfully supplying them. However, in this high added value product range that BYK is involved in that constitutes no more than 5% of Brazil's entire chemical industry, there is very little local competition," said Aurelio Rocha, area sales manager of BYK, German-based ALTANA Group's additives business arm.

With infrastructural and civil construction works as its main drivers, the paints and coatings industry is set to grow in the midterm future in Brazil. However, the concern for the quality and the sustainability of the paints and coatings involved in the process will determine the performance of providers of additives, pigments, dyes and solvents in the market. Dilson Ferreira shares his views on the future of the sector: "Our target is to see the sector growing by 3% in 2013, and given the predicted rise in the industries that we supply, this still seems realistic. We expect to see activity from major companies not yet present in Brazil and from established companies that will grow, potentially by acquiring small businesses. On a governmental level, we would like a decrease in import taxes for some materials; although these high duties were introduced to help domestic producers, they have made products that are not even produced in Brazil prohibitively expensive for manufacturers and consumers alike." •

Source: Shutterstoc

INTERVIEW WITH

Jaap de Jong & Euler Neder

JJ: REGIONAL DIRECTOR LATIN AMERICA
EN: COMMERCIAL MANAGER FUNCTIONAL CHEMICALS
AKZONOBEL

What does the competitive landscape look like in Brazil for AkzoNobel and what are the core competencies that set you apart?

JJ: Due to the diversity of our business portfolio, it is hard to identify competitors throughout the entire product line. In Decorative paints, we are one of the market leaders; in performance coatings, AkzoNobel has a very strong position in Brazil, as well as worldwide. In the specialty chemicals sector, the competitive landscape is very diverse and distributed, but in general we have leadership positions in most of our businesses. Sustainability and innovation are important core competencies, and we believe they go hand in hand. AkzoNobel ranks first in the Dow Jones sustainability index for chemicals companies, and that is a position that we are very proud of. AkzoNobel achieves a large part of its growth from sustainable innovation. For example we have moved away from heavy metals like led and chrome and we are moving from solvent to waterborne solutions. This way we are also helping our customers reduce their CO2 emissions. A good example is our pulp bleaching business, which already has a positive carbon footprint. Last year, AkzoNobel took the decision to build a new laboratory in Brazil, which will become our global hub for research dedicated to renewable raw materials. We also give a lot of attention to working with our customers to ensure the proper handling and application of our products. It is part of our values to continuously improve our efficiency, and to work in more sustainable and innovative ways together with our customers.

Can you give us a more comprehensive and detailed description of the chemicals business unit within AkzoNobel?

EN: three out of the four AkzoNobel chemical business units operates in Brasil with local production sites and all of them performed very well in 2012. The functional chemicals business unit had a sales record in 2012, with all our sub business units achieving good performance targets; our position in the market is diversified, steady and stable and we have grown in areas such as petrochemicals, pharmaceuticals, construction, agricultural and many others. Surface chemistry and functional chemicals are also working together in the mining sector, mainly dealing with ore purification for several valuable metals such iron, nickel, and copper. Our impact in this industry is big as we act in the incipient stages of the mining process, where we get involved in the flotation process, going to the ending stages, in pellet formation.
Partnering with our main customers is also inside our company culture. A good example of how AkzoNobel works to differentiate itself, collaborating more closely and directly with our customers is the successful story of our pulp and paper chemicals business unit in the new plant in Jupiá (Eldorado) where customized and targeted solutions were offered to one of our main customers.

How important is AkzoNobel Brazil to the company as a whole and what role does it serve in the global organization's Latin American strategy?

JJ: Brazil is the fourth largest country for AkzoNobel worldwide after the USA, Germany and China and we act as a coordinating hub for all Latin American operations. AkzoNobel also has a strong presence in Argentina, Uruguay and Chile and a good part of our products there are imported from Brazil, where we have solid production capabilities; in fact, 95% of all the products we commercialize in Brazil are manufactured locally. In the future, we plan to consolidate our footprint and production capabilities in these countries but also increase our presence in the Andean region, where we see consistent growth and good potential.

AkzoNobel has already announced winning several bids for works related to the Brazil World Cup in 2014. What other interesting projects are you currently engaged in?

JJ: Historically, AkzoNobel has been a big supporter of sports events: WC 2010 in South Africa, the Beijing and London Olympics and many more. Currently, we have secured six contracts for football stadiums in Brazil, five of which will be participating in the 2014 FIFA World Cup (Maracanã, Brasilia, Corinthians, Pernambuco, Beira-Rio) for which we will be assuring exterior protective coatings and some interior design coatings. AkzoNobel is also competing for projects like the Olympic park and village for the 2016 Games and we have already won the bid for a museum that will be built alongside Rio de Janeiro's main pier. Governmental social programs, such as "Minha Casa, Minha Vida" also offer great opportunities for us, as 60% of our business in Brazil is infrastructure related; a special mention goes out to our "Tudo de Cor" program, in which AkzoNobel works with local communities, authorities and national heritage agencies to recondition decaying city centers across Brazil, while training underprivileged youth to become professional painters.

What does the future look like for AkzoNobel in Brazil and in the region, both in 2013 as well as in the long-term?

JJ: For the year 2013, we are cautiously optimistic, expecting around 5% growth. We take a medium to long term view of the market in Brazil, where we believe the underlying fundamentals are quite strong. Brazil has a large domestic consumption capacity which is likely to continue to grow. Industries such as oil and gas, mining, pulp and paper, agriculture and the automotive sector will continue to show attractive growth and AkzoNobel wants to be there to supply them with our products. As a result, we are expecting on average 5% to 10% growth for the next years. We hope to double our 2010 sales by the year 2015 and we are on target to achieve that goal. •

INTERVIEW WITH

Alfred Hackenberger

PRESIDENT SOUTH AMERICA
BASF

Can you tell us more about the acrylic acid, butyl acrylate and superabsorbent polymers production plant that BASF is currently building in Camaçari?

In 2011 BASF announced the construction of the first acrylic acid complex in South America, located in Camaçari, Bahia/Brazil, which will produce, in world-scale, acrylic acid, butyl acrylate and superabsorbent polymers (SAP). It will be the first acrylic acid and superabsorbents plant in South America. With an investment volume of €500 million, it is the largest investment in BASF's century-long history in South America. In addition, BASF will start to produce 2-ethyl-hexyl acrylate, an important raw material for the adhesives and special coatings industries, in its existing Chemical Complex in Guaratinguetá, São Paulo. This will be the first plant for this product in South America. BASF is the global and regional leader in the acrylic value chain. With the new acrylic acid complex, BASF aims to ensure the supply for important products as: superabsorbents for diapers, acrylic resins for coatings, textiles and adhesives and products for civil construction. The Camaçari location was chosen based on the availability of the raw material propylene provided by Braskem S.A., the major chemical company in Brazil and the strategic supplier for BASF in this project. The construction of the new acrylic acid complex started in 2011 employing about 1,000 individuals during construction. Production is expected to begin in the fourth quarter of 2014, generating 230 direct and 600 indirect jobs. The production for 2-ethyl-hexyl acrylate in Guaratinguetá is expected to start in 2015 on the basis of acrylic acid produced in Camaçari. We expect the investment to bring a very positive impact of about $300 million per year on the trade balance of the country, thereof $200 million through reducing imports and $100 million through increasing exports.

Only 30% of Brazil's fertilizer and crop protection consumption is satisfied by local production. Has BASF seen an increase in this market segment recently?

We see the agribusiness as a growing and innovative market in Brazil. For example, our vitality index of the agriculture sector is impressive: 54% of sales in 2011 came from products launched in the last eight years. In that segment, we have developed an herbicide-tolerant soybean in partnership with The Brazilian Agricultural Research Corporation (Embrapa), which was approved by the National Technical Biosafety Committee (CTNBio). It is the first genetically modified soybean developed outside the United States. Aware of the importance of reinforcing the local production capacity of agrochemicals, we have already planned an investment of around €50 million over the next two years for this purpose.

In 2012, the import gap within Brazil's chemical industry amounted to $29 billion. ABIQUIM supports the idea of added import taxes to strengthen the competitiveness of local chemical players. Other actors in the industry claim that this measure will ultimately hurt other sectors of the economy. What is BASF's position in this debate?

In the past few years, Brazil has developed very positive and accelerated dynamics of development and growth, creating new promising market opportunities. This enables such companies as BASF to invest and work here with products and production at global scale. This is a significant and very consistent competitive advantage. In spite of having already a well-developed chemical industry, Brazil remains importer of chemical products. In the last years the deficit of chemical trade balance has increased. There is no doubt this provides a great opportunity for new investments, but certainly there are some challenges to be overcome, such as: high tax burden; and logistics and infrastructure issues that, many times, hinder an even more accelerated growth of the country. It is important to clarify that ABIQUIM's approach through the Pacto Nacional is not based on the idea of adding import taxes: it main focus is to reinforce the commitments of the chemical industry with the social and economic development of the country, pointing the major barriers that slow the decisions of investors and consequently the expanding of the national chemical industry. That being said, we support ABIQUIM's measures as they are an important factor to further develop the segment.

Could you give us further details on how research and development is dealt with in South America and Brazil?

In Brazil, BASF invests about R$100 million every year in R&D and has around 500 employees in this area. Besides that, our central R&D Center in Germany also develops solutions focused on the Brazilian market (e.g. active ingredients for the crop protection business). The company encourages the culture of innovation with a special focus on the value chain to our customers: in our crop protection business, it is our "open innovation" platform, known as "Top Science" that aims to foster innovation in agriculture, involving the scientific, academic community, as well as farmers. This initiative started in 2005 and was spread to all over Latin America, with more than 1,600 studies presented and nine patents generated. Another initiative in the sector of civil construction is our HouseE: we have built the first house of energy efficiency in a tropical climate in Brazil ("CasaE"), which was recently presented to the market. In 2011, BASF was elected the most innovating company in Brazil, and in 2012 it was recognized as the second most innovating company in the country. Both titles were granted to the company by Época Negócios Magazine, one of the most important business magazines in the country. •

INTERVIEW WITH

Eric Schmitt & Pedro Medeiros

ES: PRESIDENT, **ARKEMA QUIMICA**
PM: GENERAL MANAGER SALES AND MARKETING, SOUTH AND CENTRAL AMERICA, **ARKEMA COATEX**

Can you provide us with a brief overview of Arkema and Coatex in Brazil?

PM: Coatex is 100% owned by Arkema and it was acquired in 2007, being bought out from the Swiss mineral company Omnia. Arkema's Brazilian growth is actually acquisition based, as we also incorporated several assets from Dow Chemicals in the past. Coatex was the chemical division of Omnia and Arkema saw an opportunity to add value to its production chain, by adding a dispersant agent and thickener specialized unit to its business. Furthermore, since Coatex was already internationalized, the brand name was kept and in South America, where the Brazil office acts as a coordinator, we are working together with Arkema Coatings and Resins to promote a joint portfolio of binders and dispersant agents.

Given Arkema's intricate structure in Brazil, could you present us with an overview of your company's assets, main markets and modus operandi within the country?

ES: Globally, Arkema's three Business Segments are very well balanced, each accounting for a third of the company's revenues but in Brazil, the performance products are very strong, as we supply a solid line of Technical Polymers to the offshore oil and gas industry, where Arkema has a long-standing partnership with Petrobras and its partner. The automotive industry is also important for us thanks to the coatings division and the polymer solutions that we offer. In petrochemicals, we have a strong partnership with Braskem, for which we provide organic peroxides and catalysts that Arkema produces in its Rio Claro plant. The facility there also deals with blending solutions and we are the leading company for providing odorized gases to all the different Brazilian gas distribution companies. Arkema through Coatex Latin America now also benefits from an emulsions and additives production site in Aracariguama that was recently acquired from the Brazilian group Resicryl.

PM: Before the Resicryl acquisition, Coatex was operating only through a targeted indent business in order to avoid the 14% to 20% import duties that are applied for thickeners and dispersant agents. The newly acquired facility's core business was in binders and its strategic location of being close to the top paints and adhesives producers in Brazil made it a very appealing target to us. The main objective of the acquisition however was to enable Arkema Coatex to enlarge and expand the platform for its current imported products that will start to be localized in July 2013. Binders are commodities and the market for them is very competitive; we target specialties and that is what we want to leverage. Architectural coatings and the mining processing markets are Coatex's main areas of activity but we are also pursuing a presence in the domo-sanitary and construction sectors, which have great growth potential in Brazil. Structural residential construction plans such as Minha Casa, Minha Vida as well as works in highways, railways, and hydro power plants hold tremendous potential for the country and we plan on leveraging that. BASF's Suvinil, Omya (for calcium carbonate), Imerys (kaolin) and Ecolab Nalco (water treatment) are Arkema Coatex's main clients in its respective markets.

Arkema places a lot of value into research and development and innovation, across its divisions. Does Arkema believe the market is willing to pay the extra price for more sustainable and green products?

PM: Brazil is ranked among the world's top five paints industries but the quality of the products here is much lower than in the US and the EU and the end consumer is primordially preoccupied with the price of the product and not its environmental impact or quality. The Brazilian government has been very slow in adopting appropriate legislation and regulations in the sector are actually implemented by ABRAFATI that nowadays classifies paints in three categories: economic, standard and premium. ABRAFATI reserves the right to purchase samples from retailers and verify if the specified standards are actually met. These kinds of initiatives will eventually drive the market's willingness to pay the extra price for the extra quality. Coatex's line of products is absolutely green, with low VOC levels, APEO free and heavy metal free and even though we are not gaining a lot due to that in Brazil, we are committed to having a high quality line that is more environmentally friendly. This factor, along with Coatex's strong technical support, constitutes the main competitive advantages that we have on the market.

BRIC countries are a strategic development ground for Arkema and the company's target for 2016 is to have these markets account for 30% of its global revenue. Given this context, what is the vision that you have for Arkema in Brazil for the next three to five years?

ES: Arkema is pursuing strong growth in Brazil and we want to really impose ourselves here over the next years in particulate, through innovation and new products such as technical polymers. There is a sense of urgency that Arkema has in the country, since we already have well established important competitors in the market. Brazil holds tremendous potential and we need to have more manufacturing power in the country if we are to succeed. In order to achieve that, Arkema is looking to expand its footprint in the country from two production units today to seven or eight in the next four years. In the case of Arkema Coatex, its aim for the future is to become a top supplies in four market segments: coatings, mining, construction and domo-sanitary. •

The Automotive Industry

A driver for growth

Brazil currently has approximately 250 cars per 1,000 inhabitants, well below the average of the USA or Western Europe, which tend to boast between 500 and 800 cars per 1,000 inhabitants. The sheer size of the market and its growing middle class, however, have made the country the fourth largest national vehicle market in the world. Attracted by growth of 6.1% in 2012, car makers from around the world are expanding their presence in Brazil.

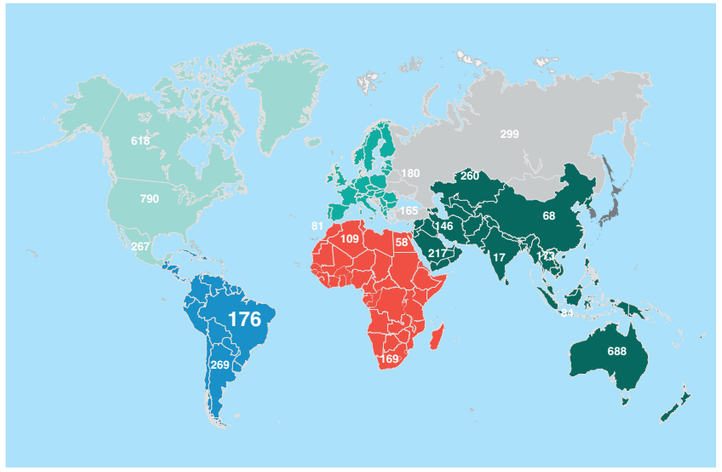
Hyundai inaugurated a 150,000 unit per year plant in Piracicaba, Sao Paulo, in November 2012; Honda is planning to build a new plant to complement its existent production line in Sumare (Sao Paulo), and Toyota is opening up a 1,500 employee-strong facility in Sorocaba (Sao Paulo), with a further $494 million plan of investment for a new engine factory. Finally, Volkswagen Group, which already has four plants in Brazil, plans additional investments of $ 4 billion in the country by 2018.

One of the sectors heavily influenced by the automotive industry's performance is the carbon black market, where Birla Carbon and Cabot lead the way. By acquiring Columbian Chemicals in 2011, Aditya Birla became the world's largest carbon black producer, and the newly formed Birla Carbon is already modernizing its plant in Cubatao, Sao Paulo. Ronaldo Silva Duarte, president for South America for Birla Carbon, comments: "Birla Carbon's performance largely depends on the car industry, and more specifically, the tire sector of the automotive industry, as that impacts 85% of our business. The year 2012 saw a 38% decrease of the truck business in Brazil, caused by new EURO 5 fuel regulations; the effect was even more dramatic since trucks, buses and high-performance vehicles are responsible for around 50% of the carbon black demand, due to the complex nature of their tires. Another issue was the amount of imports within the tire sector, which, unofficially, equated to 40% of the Brazilian consumption. These trends led to a small contraction of our business in Brazil but we have since then seen recent improvements in the market, especially in last quarter of 2012 as well as in the first months of 2013. Furthermore, if, in the future, the people of Brazil will reorient themselves towards more technologically sophisticated vehicles, with bigger tires, such as SUVs, a rise in carbon black usage will be probable."

Heavily interlinked with the automotive industry, the engineering plastics sector is growing in

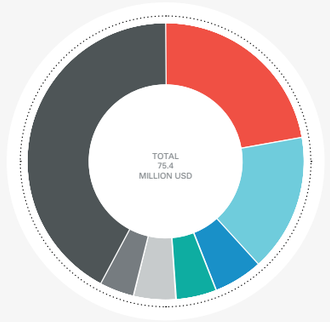
Vehicles per 1,000 Inhabitants

Source: OICA



Brazil's Automotive Industry

Source: ANFAVEA



China	24%
USA	17%
Japan	6%
Brazil	5%
Germany	5%
India	4%
Other	45%

Brazil, with Dutch Giant DSM intensifying its efforts in the country, as explained by Roelof Westerbeek, president of DSM's Global Engineering Plastics division: "Our main target is the automotive sector and the rapid growth of this industry in Brazil ensures that the country remains our most important base in the region. Our presence in Brazil is still relatively small compared to the other main emerging markets, but we have tripled sales in the past years and our growth strategy is very ambitious. In five years we will certainly have our own plant in production and we aim to substantially increase our market share in engineering plastics, focusing strongly on the automotive sector."

Danilo Micheletti, CEO of RadiciPlastics Brazil, details new trends in engineering plastics: "Upcoming projects involve transfers of technology from Europe and the US to Brazil, most of them for automotive applications. The new trend is to produce smaller engines that operate at higher temperatures, and we have produced nylons that can withstand continuous working temperatures of 210 and 230 degrees. Another new area of work in the automotive industry is metal replacement. We have two types of materials: traditional glass reinforcing nylon, with good strength and high temperature resistance, and long lost fiber nylons, which can substitute for metal in several parts of automobiles."

Eastman, an American specialty chemicals company with a broad portfolio in adhesives, sealants, and coatings, bought Solutia Chemicals for $4.7 billion and Scandiflex Brasil during 2012, thus gaining access to new sectors such as rubbers and tires. Pedro Luis Fortes, operations director at Eastman Brazil talks about these developments: "Solutia Chemicals is a global company that focuses on performance materials and specialty chemicals that have cross-industrial and cross-sectorial applications, while Scandiflex is an important local player dealing with plasticizers and TPU. These acquisitions have greatly increased Eastman products portfolio and we now have access to a multitude of new sectors such as advanced interlayers, performance films, rubbers and tires etc. With Solutia, we now have two manufacturing facilities in Brazil along with Scandiflex plant. Our new major plant operating in Itupeva, SP consolidates our presence in Brazil as an important fast expanding market for Eastman." Meanwhile, HB Fuller, a multinational sealant and industrial adhesives producer, is also contributing to M&A activity in the sector as well, with the acquisition of Plexbond Quimica, a Curitiba based polyurethane and polyester resin manufacturer, that had revenues of roughly $20 million in 2012.

German adhesive giant Henkel completes the list of movers in the market, with the acquisitions of National Starch (2008) and Cytec's pressure sensitive adhesives business unit (2012). In Brazil since 1950, Henkel's current activity in the country is supported by four plants that manufacture sealants, and consumer and industrial adhesive products. Furthermore, the company is now looking at investing $14 million in the coming years. Antonio Do Vale, Henkel's vice president of adhesive technologies for Latin America, sees economic value not only in the assembly of cars, but also in the construction of the plants that will produce them: "We work with all the major brands in the automotive industry here in Brazil, and as a large number of important investments are being made in the construction of new production plants, we are liaising with their design departments to prepare for the installation of the sites and make certain that we have exactly the right product for our customer's needs."

While most companies have put off fixed capital investment during the years of the crisis, the same cannot be said about LORD Corporation, which has been in the Brazilian market for 41 years, providing vibration control applications, coatings and adhesives to the industrial and aerospace and defense industries. The company is currently building a new $25 million plant in Itupeva, Sao Paulo. Sandro Leonhardt, regional manager for South America, explains the automotive sector's boom and perspectives in the country: "The automotive market will continue to grow, and the entrance of major car companies shows that they see a good perspective for growth. What is driving growth is the expansion of Brazil's middle class; during the 2009 crisis, when the government lowered interest rates and taxes, many people were able to buy their first car. The first dream of the Brazilians is no longer to have a house, but rather to purchase a car, because it acts as a status symbol. This change in mindset will continue to drive the automotive market in the short to medium term." •

H1 2013 Production Statistics

Source: OICA

Brazil	
Cars	1 408 094
Commercial vehicles	448 711
Total	1 856 805
% change	18.10%

INTERVIEW WITH

Ronaldo Silva Duarte

PRESIDENT FOR SOUTH AMERICA
BIRLA CARBON

Columbian Chemicals was acquired by the Aditya Birla group in 2011. How has the transition process been going?

First of all, it is worth mentioning that we are very happy about the way in which the integration and transition processes have been done. The mid and long term growth strategy approach that Aditya Birla is planning on pursuing in Brazil, as well as their faith in the region's enormous potential aligns perfectly with the way we see things locally and this has produced a very good synergy overall. Additionally, Aditya Birla's Asia focus, combined with Columbian Chemicals' Europe and US focus have made the acquisition a strategic success in point of market access and worldwide distribution. Organizationally speaking, there have not been any changes but we have been rejuvenated by a new wave of modernization, investment and positive thinking. As a matter of fact, despite the current uncertainty regarding investments in Brazil, Birla Carbon will be modernizing its plant in Cubatao, improving its productivity and overall, its competitiveness. Before, Aditya Birla used to be the world's fourth largest carbon black producer while Columbian Chemicals used to be the 31st; now, we are proud to say that Birla Carbon is number one in the world in carbon black production.

Last year, Birla Carbon was expecting to grow 3% over the course of 2012. Did those previsions come true?

Birla Carbon's performance largely depends on the car industry, and more specifically, the tire sector of the automotive industry, as that impacts 85% of our business; the rest is occupied by paints (3-5%), while mechanical rubber goods (MRGs) take the remainder at 10-12%. Unfortunately, in 2012, we were affected by two negative trends. The first was a 38% decrease of the truck business in Brazil, which was caused by new EURO 5 fuel regulations; the effect was even more dramatic since trucks and buses are responsible for around 50% of the carbon black demand, due to the more complex nature of their tires. The second was the amount of imports within the tire sector, which, unofficially, equated to 40% of the Brazilian consumption. These trends led to a small contraction of our business in Brazil but we have since then seen recent improvements in the market, especially in last quarter of 2012 as well as in the first months of 2013.

The rise of the middle class in Brazilian society has been a driver of growth for the automotive market. Is that an opportunity for Birla Carbon?

This is an interesting trend and it could potentially be a significant opportunity for us, but only under certain conditions. First, it is worth noting that last year, even though car sales levels surpassed those of 2011, Brazil's national production actually decreased by 2%. Second of all, these new middle class families are choosing to buy average, regular cars, most of them imported, that have regular non-performing tires; what this means is that the amount of carbon black that goes into these tires is minimal; overall, regular car tires account for about 15% of our business. Third, the demand for carbon black is dictated mainly by heavy duty, high-performance vehicles, such as trucks and buses, and their demand is fairly independent of the rise of the middle class. However, if, in the future, the people of Brazil will reorient themselves towards more technologically sophisticated vehicles, with bigger tires, such as SUVs, a rise in carbon black usage will be probable.

Could you tell us more about the types of challenges Birla Carbon sees in the Brazilian business environment?

First, the exchange rate policies change very often in Brazil and that constitutes a problem. Furthermore, and this is an issue that we have raised with ABIQUIM and the authorities, the competitiveness of the local automobile producers is an aspect that affects us; there is potential of domestic growth for the auto sector but if imports will be used to cover this demand, our business will suffer. Also, labor costs in Brazil have been increasing while productivity levels have remained the same. Finally, the high prices of natural gas have greatly impacted the petrochemical industry and many investments have been diverted away from Brazil on that basis. All these issues have made Birla Carbon worry about its clients, the tire producing companies, and we are looking towards the authorities to give more support to our customers' businesses.

What does the competitive landscape look like in Brazil and what are your main competitive advantages?

In Brazil, Birla Carbon is facing competition from Mexican and Venezuelan imports; at a regional level however, since we are also coordinating all sales for South America, most imports come from Asian countries. Even so, we have 45% of the total market share for carbon black in Brazil. Our main competitive advantages relate to our products' performance and our excellent distribution network. Our services are top quality, we are very flexible to the market demands, our response time is immediate and, as a result of the acquisition, we now benefit from production capabilities all over the world (China, Korea, Egypt, Brazil etc.). We are developing new technologies, such as a specialized carbon black that will be able to compete with silica and open new markets in the tire sector for us. Birla Carbon is prioritizing sustainability and consequently,

INTERVIEW WITH

Roelof Westerbeek

PRESIDENT
DSM ENGINEERING PLASTICS

What is the strategic importance of Latin America, and especially Brazil, to the Engineering Plastics division globally?

For DSM Engineering Plastics, Latin America is still a fairly new frontier as we only moved into the region in 2008. Within Latin America Brazil is certainly the dominant market for us, although for certain of our products it is true that other countries play a key role. For example, one of our principal markets is in packaging for meat and fish products for which we see a lot of demand from Chile and Argentina as they are such large producers of foodstuffs. However, our main target is the automotive sector and the rapid growth of this industry in Brazil ensures that the country remains our most important base in the region.

How important is R&D to your business and how do you see the state of innovation in Brazil today?

Innovation is incredibly important for DSM and there is a company-wide emphasis on both product and application development, as we consider it to be the main way in which we differentiate ourselves from the competition. We do not aim to be the lowest cost producer, although of course we want to remain competitive. Instead, we are far more interested in leading the market in terms of delivering the most cutting-edge, high performance solutions to our customers. Historically, R&D within the company has been concentrated in the Netherlands but as our manufacturing and sales bases have globalized, so too have our development centers and we now have laboratories in China, Japan, the USA, and India. In Brazil we do not yet have any research centers, as we do not see any demand from the market. Generally speaking, the level of technical innovation in the country is still relatively low and, like us, many companies conduct their R&D abroad whilst using Brazil as a manufacturing base. This is a fairly typical situation for an emerging economy, and we saw a similar disparity in China in the past, but now as we are seeing more and more investment in innovation there, the question is if and when this trend will appear in Brazil. We believe that it will happen, but that it will definitely start out small and will probably not grow as rapidly as in China.

How have you found the situation dealing with Brazil's notorious shortage of skilled labor?

It is true that the country still suffers from an acute lack of qualified technicians and engineers relative to demand, particularly in the case of engineering plastics. At university level there is no real stock of experienced people who are able to transfer knowledge in this area, and we strongly believe that it would be in Brazil's best interests for the government to invest heavily in improving educational services in the sector. In other areas, such as biofuels, agrochemicals, and even oil and gas exploration, all of which are industries which the government has prioritized, there is now a very high level of expertise in the country and a considerable amount of research is being carried out at both an academic and a corporate level.

What do you consider to be the main challenges to be overcome for plastics producers in Brazil?

Aside from the shortage of skilled labor in the country, the main obstacle for our business in Brazil is the cost. It is often said about China that the nation will grow old before it grows rich; in the case of Brazil, it will grow expensive before it grows rich. Not only is labor very expensive, there are also exceptionally high import duties for companies that wish to bring goods into the country. The idea behind these taxes is of course to protect the domestic industry from cheap imports, but in reality the strategy has totally backfired: with no competition from abroad many national companies have stagnated as there is no incentive for them to invest in innovation or to try and keep costs down. As a result, even with the high taxes on imported goods, it is often cheaper to import materials from North America than it is to produce them domestically. In terms of plastics production, this means that Brazil does not currently have the necessary conditions to become an exporter, as it simply cannot compete on production costs. There is a general consensus among industry professionals that this situation is simply unsustainable, and only when trade barriers are brought down will the country see the possibility of becoming a major player on the world stage.

Where do you see DSM Engineering Plastics in Brazil five years from now and what are the main strategic markets that you will be pursuing?

Brazil is a very important market for DSM and for the Engineering Plastics division, and whilst our operation is still very much in the early stages, we are committed to growing in the country and establishing a strong presence in the market. Although there are several significant challenges to overcome, we firmly believe in Brazil's potential. In five years we will certainly have our own plant in production and we aim to substantially increase our market share in engineering plastics, focusing strongly on the automotive sector. •

INTERVIEW WITH

Sandro Leonhardt

REGIONAL MANAGER SOUTH AMERICA
LORD CORPORATION

The year 2012 was a difficult one for Brazilian companies. How did LORD perform and has it recovered?

The economic slowdown in 2012 affected most of the companies in our markets, but we weathered the storm quite well. We knew that it was only a temporary dip and that the regional market would bounce back quickly. We maintained our current structure during the downturn, believing that this would position us to support the market once Brazil recovered–and this is exactly what happened. We are now on track to grow again, and at a much faster rate than before. Many companies put their investments on hold in 2012, but we did the opposite, buying new land and preparing for the 2014 construction phase of our new US$ 25 million dollar facility. Throughout our 40 years in Brazil we expanded in a piecemeal manner, and until now our site was able to accommodate this growth. However, we realized that if we wanted to expand beyond our current technologies, and also expand geographically, we would require more space, so we decided to invest in a site which is five times larger. At the start of production we will have 2.5 times more capacity than what we have today, but we can easily add more equipment and capacity as needed. This site will allow us to grow for at least another 25 to 30 years. The location of the site was also a strategic decision: the skills of our people are very important to our business, and the selected location will help us retain our staff of 85 direct employees.

What are the most important sectors to LORD's business in Brazil, and do you envision the breakdown evolving in the short to medium term?

LORD supplies technologies to three strategic markets in Brazil: automotive, industrial and aerospace and defense. In the automotive market, we supply coatings as well as structural adhesives for bonding composites, plastics, rubbers or metals. The industrial market segment comprises the mining industry, infrastructure, agricultural equipment as well as buses and boats. For each of these markets we bond rubber-to-metal, while also supplying rubber parts for anti-vibration applications. We also have structural adhesives that bond fiberglass, metal or plastics parts for buses or boats. In the aerospace and defense industry, we supply applications to control vibration. Our current breakdown is 20% aerospace and defense, 40% automotive and 40% industrial applications. One area where we see potential for growth is the energy industry, where we can offer solutions such as rubber parts for controlling vibration in oil and gas operations, or coatings to avoid erosion on wind power blades among other technologies. For example, over the next five years, Brazil will invest over US$ 90 billion in pre-salt drilling. Pre-salt drilling is very demanding and can lead to vibration issues, and LORD provides knowledge and expertise that deliver solutions to these demanding applications. Our New Business Development team is dedicated to developing our business in the energy market, and we are defining a strategy for engagement in Brazil.

LORD is very active in the Brazilian automotive market, which grew 6.1% in 2012. Do you see demand increasing in this sector over the next few years?

I believe the automotive market will continue to grow, and the penetration of major car companies into the region shows that they see a good prospect for growth. Many of the major companies have been established here for some time, including Ford, Fiat, General Motors, and Volkswagen. Over the last ten years we have seen the arrival of Japanese and French manufacturers, and now we see more Asian players attempting to make an entrance. What is driving growth is the expansion of Brazil's middle class, but even the lower classes are beginning to afford cars. During the 2009 crisis, when the government lowered interest rates and taxes, many people were able to buy their first car, and this propelled the automotive industry forward. The first dream of the Brazilians is no longer to have a house, but rather to purchase a car, because it acts as a status symbol. This change in mindset will continue to drive the automotive market in the short to medium term.

If we turn to the issue of sustainability, do you see the Brazilian market demanding sustainable products, or is it an internal push from LORD Corporation to increase demand for such products in the market?

In Europe, the regulatory framework is driving companies to adopt more sustainable products. Unfortunately, Brazil still lags far behind in terms of sustainability regulations, including for volatile organic compounds (VOCs) and other emissions. However, we are gradually seeing regulatory agencies starting to look at these issues. As we build our new facility, we are already looking into designing our capabilities in a way that can accommodate the production of green technologies, such as water-based adhesives. LORD already sells water-based adhesives in the U.S. and Europe, but not yet in Brazil, although we do have global clients in Brazil showing interest in these products, as they start to feel the regulatory agencies apply stricter standards. Step by step, the Latin American markets are moving in the right direction, and we will be closely following these movements by the government and market. A regulation for solid waste has already been put in place, a sign that the government is imposing stricter regulations. •

INTERVIEW WITH

Pedro Luiz Fortes

OPERATIONS DIRECTOR
EASTMAN BRAZIL

What have been Eastman's main accomplishments during this last year?

First of all, we are very happy to announce that Eastman Brazil's value, as a company, has increased considerably since the last year. We have been growing consistently during these past years and our expansion culminated last year, when Eastman acquired Solutia Chemicals Globally for $4 billion as well as Scandiflex Brasil. Solutia Chemicals is a global company that focuses on performance materials and specialty chemicals that have cross-industrial and cross-sectorial applications, while Scandiflex is an important local player dealing with plasticizers and TPU. These acquisitions have greatly increased Eastman products portfolio and we now have access to a multitude of new sectors such as advanced interlayers, performance films, rubbers and tires etc. With Solutia, we now have two manufacturing facilities in Brazil along with Scandiflex plant. Our new major plant operating in Itupeva, SP consolidates our presence in Brazil as an important fast expanding market for Eastman. Furthermore, these acquisitions have offered Eastman better visibility in the eyes of new investors and new customers, while benefiting from Solutia and Scandiflex's loyal customer bases.

What drove Eastman to acquire these companies and what have been the subsequent challenges of integrating Solutia and Scandiflex into the Eastman apparatus?

Eastman acquires businesses because we see their potential. However, the challenges that occur after the mergers are done consist of the proper integration of these companies' activities in the overall Eastman culture and processes. Integration takes time and it must be done wisely, after a careful analysis of what needs to be kept separate and what can be integrated rapidly and completely. Moreover, from a logistical perspective, we need to accommodate far more employees, as in Brazil only we have switched from being a small office to having roughly 200 people in our company; that means finding the right organizational structure as well as acquiring new office space.

With such a large and diversified portfolio, what does Eastman Brazil's strategy look like for the next few years?

At this point we are in the process of rearranging our company to fully and efficiently incorporate the Solutia and Scandiflex mergers, but we also have our eyes on expanding in the future. Eastman has positioned itself strategically to have access to such industries as automotive, building and construction, cosmetics packaging etc; industries which, in Brazil, have been considerably outperforming the national average growth, even during the economic crisis. Overall, our strategic decision to expand makes a statement about Eastman's ambitions in Brazil. While talking strategy, it is also worth mentioning the sustainable component of our business, a feature that I am very proud of; Eastman is part of the Global Report Initiative, a project that recognizes companies' environmental excellence and we have been rewarded for two years in a row – 2012 and 2013 – as Energy Star partner of the year.

The expansion in Brazil must have automatically brought new challenges into the landscape for Eastman. What are these obstacles and how is Eastman dealing with them?

Doing business in Brazil is challenging. Moreover, imports have been and remain a constant challenge to us. Finally, the mere incorporation of Solutia and Scandiflex has caused considerable logistical and branding challenges. However, we believe that the solution to these obstacles consists in finding the right recipe for efficiently integrating our newly acquired companies. Eastman is in the process of creating a flexible, smart and fast corporate model that can adapt to the ever-changing business landscape of Brazil; we are not looking to get bigger, but we are rather trying to get smarter and target the profitable sectors, where our logistical and technical expertise can make the difference. However, even as Eastman is moving towards being a more technology-driven company, we will not forget the foundations and the principles on which this company was established: building long-term relationships and confidence with our customers.

From the interview thus far it seems Eastman is here to stay in Brazil. What is Eastman's vision of the future for its business in the region?

We are here to stay as Eastman sees great potential in the market; rumors are out that fiscal incentives might be awarded in the future by the Brazilian authorities for some of the sectors we currently have access to and, should that happen, we will be looking to maximize that opportunity. Eastman Brazil has also enjoyed the full support of our global management team and of our global CEO. I am very excited for our future and I am delighted to be part of this expansion plan that we are undertaking. Eastman Brazil has made tremendous progress year by year: the next time we meet, I believe Eastman Brazil will be even stronger and better than it is today. •

INTERVIEW WITH

Antonio do Vale

VICE PRESIDENT ADHESIVE TECHNOLOGIES LATIN AMERICA
HENKEL

Throughout the world Henkel has a wide array of strong brands in a variety of sectors including home and personal care, cosmetics, and adhesives. What is the main focus of the company in Brazil?

In other countries in Latin America, as in Europe and the USA, we have a very well-developed market for our famous HPC and cosmetics brands, but as it stands, our participation in these sectors in Brazil is not so strong. Although we will eventually grow these brands here, we prefer to wait for the ideal moment to enter the market in a leading position, rather than to work our way up and conquer the market from our current position. That being said, we do have a small but successful unit focused on professional beauty care, and particularly on professional hair products. At the moment, however, our most important business unit in Brazil is our Adhesive Technologies unit. Henkel's entire global portfolio is available in Brazil and this extends from consumer adhesives, to products for the automotive sector, to our specialized electronics offerings, to our solutions for fast moving consumer goods. Aside from this we also offer our well-known maintenance and repair adhesives in the form of our Loc-Tite products.

In addition to our synergies with the automotive and electronics sectors we are also involved in several very interesting niche markets: for example, we have a range of products that have been specifically developed for use in the manufacture of tablet computers. There are also many new developments in the production of specialized adhesives for lighting as LEDs become ever more ubiquitous, and new materials and production methods are coming into play. This is a truly exciting time for Henkel as we are able to rise to the challenge of developing solutions that all these new products will require.

How do you work with your customers to ensure that you can provide the perfect solution to them?

Aside from our standard product portfolio, we also work side-by-side with our customers to develop tailored solutions for very specific applications. For example, we work with all the major brands in the automotive industry here in Brazil, and as a large number of important investments are being made in the construction of new production plants, we are liaising with their design departments to prepare for the installation of the sites and make certain that we have exactly the right product for our customer's needs. There are a wide variety of different factors that must be taken into account when dealing with adhesives, from the properties of the materials that are being used to the temperature and humidity levels in the plant itself. Sometimes it is a case of simply adapting the parameters of an existing product, but on other occasions we must develop a new substance from scratch.

The infamous Brazil cost is a factor that affects all companies doing business in the country. What strategies does Henkel employ to deal with the negative impact of the high costs?

Henkel's strategy for dealing with the Brazil cost is simple: when we are developing a new plant in Brazil we opt for the most modern and technologically advanced design available to us because we know that the subsequent savings in labor costs will outweigh the high initial investment. At our new plant in Jundiaí we make use of the most cutting-edge production methods and place a great emphasis on automated technology in order to ensure that we are just as efficient as any plant in Europe or the United States. However, of course it is not only the cost of labor that is an issue in Brazil, it is also the availability of skilled workforce. To address this we have established several close ties with universities and other centers of higher education in the country to develop contacts with potential new employees from the very start of their university careers. We also offer comprehensive training programs in-house and offer a range of attractive opportunities including international experience and role rotation to our new recruits.

After the Rio + 20 summit, many are looking to Brazil for leadership in sustainable business practices. What practices does Henkel follow in Brazil to be more sustainable?

Here in Brazil we follow all of Henkel's global CSR strategies, but we are also able to point to some concrete results of our own. Together with one of our customers we developed a packaging solution for one Flexite line of products that eliminates the need for a blister pack around the tube containing the material. By getting rid of this blister pack, Henkel is now saving approximately 1,770,000 liters of water, 88,000 kw/h of electricity and 1060 Eucalyptus trees per year. We are also enhancing our R&D capacity in Brazil in order to take advantage of the great potential here to develop products based on renewable sugarcane-based feedstock and green polymers, all of which are exciting opportunities for the future.

In the context of great economic prospects for Brazil in the coming years, what is the vision for the future of Henkel in the country?

Henkel has a strong focus on growing in emerging markets and Brazil will be a crucial part of this strategy. We recently published our growth targets for 2016, and one of our most important goals is that of the €20 billion sales predicted for 2016, €10 billion should come from emerging markets. Within this panorama, Latin America, and particularly Brazil will play an important role. With our new investments we see our capabilities expanding in a tangible manner and we hope to grow at twice the market rate for the coming years. We are expecting double-digit growth, and Brazil will be the catalyst that enables this. •

Food and Personal Care

Back to basics

With 190 million people increasing their consumerist behavior year after year, it is no surprise that Brazil's home and personal care and food markets have flourished in recent times. The country is currently the world's third largest beauty market, with a 9.6% share of global sales, and the chemical industry's contribution to the sector was worth $ 14.3 billion in 2012. The strongest segment is represented by hair care products, where Brazil ranks second in the world, and where shampoos and hair treatment and coloring solutions account for the largest sales. A feature that stands out is the strong presence of national companies in the market, where Boticario and Natura dominate. However, further upstream, multinational businesses are gradually crowding in to get a piece of pie.

Gelita, the largest gelatin producer in the world, has been in Brazil since 1982, where the company is leveraging the excellent supply of hide raw material that the country's large herd populations offer. With applications in personal care, pharmaceuticals, and nutrition products, Gelita owns three sites in Brazil, one of which being the largest hide gelatin plant in the world. Claudia Yamana, vice president of marketing and sales for the Americas, discusses the social realities that help her business in the country: "Brazilians are people that are very concerned with their aspect and health and the fact that the population is aging means that the demand for personal care, health and nutrition products will be increasing. The supplements and the sports nutrition markets will also be expanding, as more gyms are opened all over the country. Our research and development department has a global mindset and, for example, even if Brazil's current focus is in pharmaceuticals, our innovation facilities here target food products."

One would not be able to cover all of Brazil's core competencies without mentioning the country's food-producing capability that makes it the world's largest chicken meat and beef exporter. Even though 2012 saw a reduction in chicken and beef exports from Brazil due to increased grain prices, the Real's more than 10% depreciation in comparison to the US dollar transformed the outlook for 2013 to a positive one. These realities have impacted several adjacent sectors over the last years, and businesses dealing with food packaging and animal feed and nutrition have seen profits soar.

Companies that adapt to Brazil's natural advantages, rather than simply attempting to replicate business models in their other geographical areas of operation, are better placed to succeed. Dow Corning, who built the first silicone plant in Brazil – and Latin America – in 1978, has found that the strength of the Brazilian market allows them to replicate the majority of their global product lines. Yet adaptation to market strengths is also an important aspect of their business. "Dow Corning's strategy for the future is to move aggressively into industries for which Brazil has a natural affinity, such as agriculture or mining. There is a significant internal demand in the country and we believe that several new exciting opportunities will arise from this. In real terms Dow Corning will continue to grow at a higher rate than GDP and we are very confident about the future of the company and the future of Brazil," explains Angelo Bianchini, regional president Latin America for Dow Corning.

"Dow Corning does have a worldwide HQ, which gives us our global outlook, but the structure of different business units does not follow a set pattern; commercial areas depend on the demands of the region, allowing us to adjust our focus to better cater to the particularities of the location," says Marco Jordão, Latin America commercial director for Dow Corning

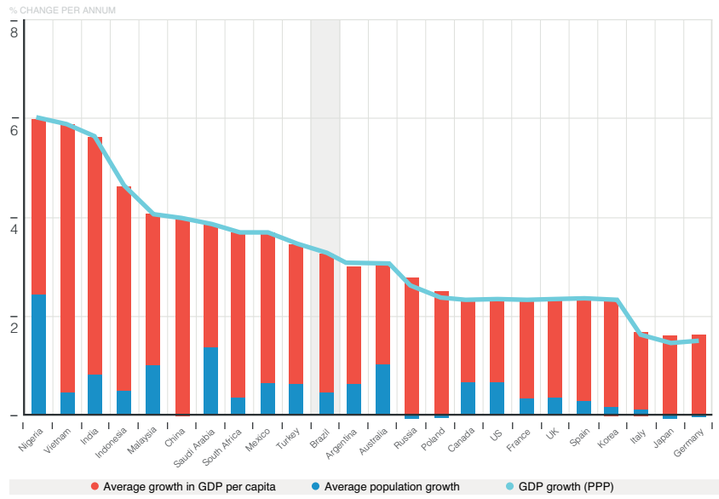
Claudio Gaino, sales vice-president and head of Latin American operations for Perstorp, a Swedish specialty chemicals company that produces tolomates in Brazil since 2007, discusses the market for animal feed additives in the country and its outlooks: "One market that is looking particularly promising for us is additives for animal feed; as protein is relatively expensive for feed producers, they frequently look to supplement this with our additives. When the producers have good years they use more additives, and recently the market has been growing at 10% to 12% per year, passing on the profits to us. Recent forecasts suggest that we have three more years of similar growth to look forward to."

Nonetheless, expensive raw materials and high logistics costs have pushed back companies like Taminco, the world's largest integrated producer of alkylamines and alkylamine derivatives, from producing locally, and paradoxically, the organization nowadays finds it cheaper to transport its products from its Louisiana (US) plant to Brazil. Jean-Michel Denis, regional vice president for Latin-America, Taminco, discusses the problems the company is facing in the country: "The logistics costs are very high, and trucking companies are becoming more and more expensive, while their reliability is not that good due to the long distances (4,000 km) they have to cover to reach the southeastern region of Brazil, which is the main economic core of the country; cabotage is not a fully viable solution either since the frequency of the boats is still not satisfactory. Secondly, there are very little incentives and tax reliefs from the part of the Brazilian authorities, which have

53

Favorable Demographics: Projected GDP per Capita

Source: PwC



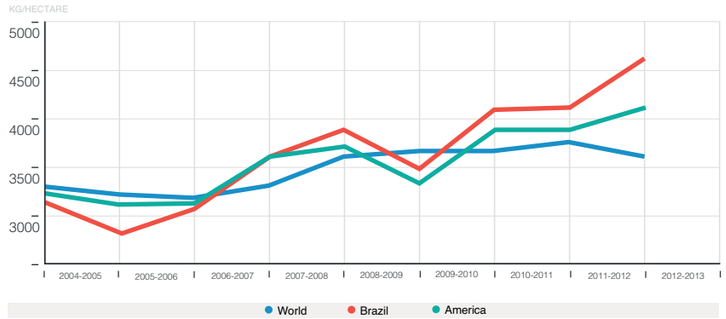
Toiletry and Cosmetics: Exports by Type

Source: ABIHPEC

Hair Care Products	25.6%
Oral Hygiene	20.7%
Soap	19.3%
Deodorants	8.9%
Disposable	8.7%
Others	16.8%

Agrochemicals: Cereal Yield

Source: World Bank



Agrochemicals: Land Use in 2011

Source: World Bank

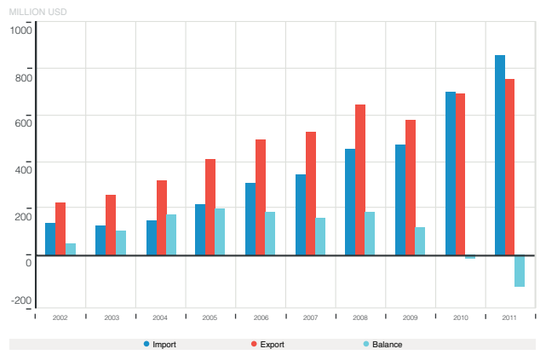
Agricultural Land
32.5%

Arable Land
8.5%

Permanent Cropland
0.8%

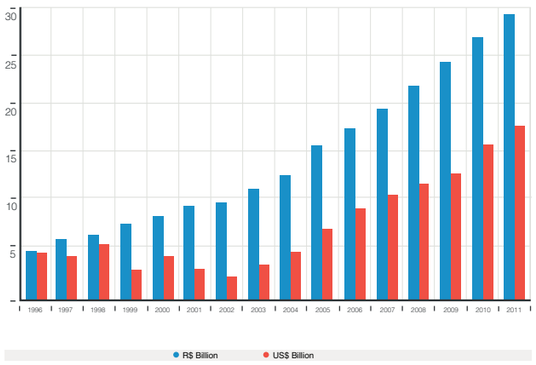
Toiletry and Cosmetics: Trade Balance of Personal Hygiene, Perfumery and Cosmetics

Source: Associação Brasileira da Indústria de Higiene Pessoal, Perfumaria e Cosméticos (ABIHPEC)



Toiletry and Cosmetics: Sector Growth

Source: Associação Brasileira da Indústria de Higiene Pessoal, Perfumaria e Cosméticos (ABIHPEC)



INTERVIEW WITH

Marcelo Pupo Nogueira

GENERAL DIRECTOR
ITW CHEMICALS

ITW Group performed very well financially during the past few years of the economic crisis, in 2010, 2011 and 2012. What were the financial indicators of ITW Chemical Brazil in this same period?

Financially, we are doing very well and ITW Chemical has been performing at very good standards in recent years. More recently, in Brazil, we have embarked on a growth strategy based on three new platforms: metal enriched paints (with our brand Galmet from Australia), food products (with Rocol from the UK) and rubber mold releases (with Franklynn in the US). ITW Chemical now has specialized teams which are dedicated to these particular areas of growth that have a lot of potential. Apart from these initiatives, we also have our traditionally successful market segments, such as cutting fluids, lubricants, solvents, degreasers and maintenance, repair, and operations; it is worth noting that all our businesses serve industrial purposes. The total value of the Brazilian market in our segments of operations is worth somewhere around $ 1.3 billion and we control about 3% of that, so there is plenty of room to grow for ITW Chemical domestically and we are doing just that.

How important is ITW Chemical Brazil to the global business?

Brazil was and is very relevant to the ITW Group, given its economic importance at a worldwide level. In 1999, ITW only had two businesses in Brazil, and now it has roughly 30: that alone is proof of its strategic significance. Furthermore, we are currently establishing corporate offices in Sao Paulo, getting more local independence, as part of the decentralization policy that our group is pursuing. ITW Chemical employs roughly 150 people, most of them in sales and in the technical field. And while we do act as coordinators for all Latin America, serving countries such as Argentina, Chile or Uruguay, our exports constitute but a small part of our business given the complex regulations that we confront ourselves with in the chemical export process.

ITW Chemical Brazil unites several brands under its name. So what are your main products and services and which industries are essential to your business?

Our main product in Brazil is our Rocol brand, which specializes in high performance lubricants; Wynn's, an automotive maintenance company also has very good name recognition locally and in Uruguay, where exports are doing very well. All our brands are foreign, with the exception of Unichemicals and Archem, but 80% of all ITW Chemical products are made in Brazil and adapted to the local market. Our services constitute a big component of our business, especially in the field of cutting fluids and solvents, where we work closely with our customers to ensure the proper implementation of our solutions. The main industries that ITW Chemical serves are the MRO markets, food, steelworks, car parts, sugarcane mills, rubbers and plastics. Our philosophy is to focus on profitable, value adding segments of the markets and stay away from items such as commodities; the range of our products offers us good flexibility and adaptability.

The import gap in the Chemical Industry for Brazil in 2012 was worth USD 28 billion. Some actors in the chemical sector wish to see more import taxes, while others, such as distributors, claim that these import taxes ultimately hurt the economy as a whole. What measures would ITW Chemical like to see to improve the competitiveness of the Brazilian chemical sector?

Despite the increase in the demand for chemicals in Brazil, these first months of the year have shown a trend for domestic industry competitiveness loss, which leads to market share reduction and, consequently, high idle standards in production sites. The Federal Government is aware of the obstacles faced by entrepreneurs at the moment, and it has been studying several emergency actions. Among the measures which are being studied by the Government right now, we can mention tax cuts on PIS, COFINS, and IPI on raw material purchase and capital investment. Such actions should reduce, or potentially even eliminate the cascading effect of taxes. Aiming to counterbalance the rising prices global trend, as well as seeking to rationalize the raw materials prices, ITW Corporation created a Strategic Sourcing Board of Directors, whose specific purpose is to act globally on the acquisition of chemical inputs. Such initiatives meet our needs, since the volumes traded on the global scale are considerably significant, and centralized price negotiations are highly effective.

The paints and coatings Industry will likely experience considerable growth in the near future, due to the World Cup, the Olympics, as well as the structural governmental funds from programs like Minha Casa, Minha Vida. How do you see this playing out over the next few years?

The Federal Government's presently ongoing projects, such as Minha Casa, Minha vida, the future events of the World Soccer Cup in 2014, and Olympic Games in 2016 and finally, The Energy, and the Oil and Gas market expansion have all greatly improved the activity of the Brazilian industry as a whole. However, the emphasis falls mainly on civil construction and on the offshore business. Taking advantage of all the growth opportunities and market maturation which are present now, ITW Chemical and Archem are strongly placed as input suppliers for the market segments involved in the processes, such as cement, steel, quarrying, corrosion protection, oil rigs, and gas and energy sectors, among others. Several ITW Chemical and Archem brands, and materials of other ITW platforms present in Brazil are already benefiting from the measures taken not only by the Federal Government, but also by the sectors linked to oil and energy, and these effects will last throughout the foreseeable future. •

not reduced the 15% import duties for our raw materials. Most importantly, all local raw materials are very expensive, since they are correlated with naphtha levels; ethanol, methanol, and the entire cost chain of production are costlier in Brazil than in the USA, for example."

High raw materials costs are also impacting ITW Chemical Brazil, part of the larger Chicago-based ITW Group, a corporation with a strong M&A philosophy. The company, which traditionally focused on cutting fluids, lubricants and solvents, is now conducting a new market strategy based on food, paints and rubber molds. Marcelo Pupo Nogueira, general director, ITW Chemical Brazil, explains the measures taken by his organization to alleviate high costs in Brazil: "Despite the increase in the demand for chemicals in Brazil, these first months of the year have shown a trend for domestic industry competitiveness loss. The Federal Government is aware of the obstacles faced by entrepreneurs at the moment, and it has been studying several emergency actions. Among the measures being studied by the Government right now, we can mention tax cuts on PIS, COFINS, and IPI on raw material purchase and capital investment. Such actions should reduce, or potentially even eliminate, the cascading effect of taxes. Aiming to counterbalance rising prices, ITW Corporation created a Strategic Sourcing Board of Directors, whose specific purpose is to act globally on the acquisition of chemical inputs."

However, perhaps there is no other better company than Evonik to exemplify the potential of the home and personal care and food markets in Brazil. The German specialty chemicals giant is presently implementing a €200 million investment plan that encompasses three plants: one amino-acid facility in Castro (Parana) and two facilities in Americana concentrated on precipitated silica and on raw materials for cosmetics. Weber Porto, president of Evonik Latin America, explains the strategy behind his organization's Brazilian focus: "Brazil is very competitive when it comes to renewable materials, such as sugarcane and corn, and meat production. Given these strengths, Evonik Brazil is investing into a new Biolys® amino-acid production facility in Castro, an operation aligned with Evonik's Health and Nutrition global megatrend. The home and personal care market is also very interesting for us in Brazil and there is a very well established local market in the country, where local companies have also high technological standards. We could not afford to miss out on the cosmetics market and thus we will be constructing a 50,000 mt/y capacity plant in Americana, focused on raw materials for the sector. The world population is growing, global health systems are improving, and people will eat more and better, consume more medicines and more cosmetic products: these are all facts, and through initiatives such as our new plants in Castro and Americana, Evonik is strategically placing itself to be aligned with this new health and nutrition reality."

Looking forward, the next years should see a 7% CAGR for Brazil's home and personal care market, number that will largely be driven by the country's increasingly rich and ageing population that will demand a higher degree of sophistication of beauty products. Brazil's arable land potential and food-producing competency will put it at the forefront of feeding the world's growing population. Subsequently, the future success of chemical companies associated with the personal care and nutrition sectors in Brazil will be guaranteed by the very basic nature of life. •

INTERVIEW WITH

Angelo Bianchini & Marco Jordão

AB: REGIONAL PRESIDENT LATIN AMERICA
MJ: COMMERCIAL DIRECTOR
DOW CORNING

Could you provide us with some information about the history of Dow Corning in Brazil and bring us up to date on the company's current facilities in the country?

AB: Dow Corning has a long and fascinating history that begins in 1943 when the company was set up to investigate and apply the innovation of silicone to address customers' needs with highly specialized technologies. Our first facility in Brazil was founded just 20 years after the company was born, and since that time we have been expending strengthening our business in Brazil and Latin America. In 1978 we built the first silicones plant in Latin America and it is still in use today. The factory, which is located in Campinas, is a finishing plant where we produce a range of products including sealants for the construction industry, emulsions, silicone rubber, and dispersions in various solvents and other vehicles. The facility gives us a lot of flexibility in terms of the type of products we can manufacture and allows us to stay much closer to our customers. More recently Dow Corning has taken an important step towards a totally integrated production chain and invested in two silicon metal plants, in which naturally occurring quartz is converted into silicon metal, which is then used as feedstock at our other plants. Not only does this help us manage our supply chain and reduce costs, but it also makes our entire operation more sustainable, particularly as all the wood that is used in the bio reduction process is sourced from our renewable forests. Today, Brazil continues to be an important market to Dow Corning and the majority of our worldwide product lines are replicated in the country.

How is the company structured in terms of different business units?

MJ: Worldwide Dow Corning's portfolio includes over 7,000 products, but broadly speaking the company is divided into two main units: basic silicones, sold via our XIAMETER brand, and specialty products, sold via the Dow Corning brand. For the production of basic silicones Dow Corning operates several of the largest plants in the world, which are located in the USA, the UK, and China, and the sheer scale of these facilities allows for extremely competitive production costs. Further downstream, the specialties unit is divided following the huge range of markets that we cover, such as automotive, electronics, construction, beauty care, packaging, and oil and gas. Dow Corning does have a worldwide HQ, which gives us our global outlook, but the structure of different business units does not follow a set pattern; commercial areas depend on the demands of the region, allowing us to adjust our focus to better cater to the particularities of the location. We consider Latin America to be an individual region because all the countries share certain cultural similarities. Although Brazil acts as our main center for the region, we are not just a Brazilian company and we are in fact very active throughout the continent, with offices strategically positioned in Mexico, Colombia, and Argentina.

Silicones have an enormously varied range of applications. Within this panorama what are the most important markets that you serve in Brazil?

AB: In terms of volume there are three principal industries that constitute Dow Corning's largest markets in Brazil today: construction, beauty care, and the automotive sector. On the other hand, we are also present in other markets and are investing heavily in developing them. We see great opportunities in developing new areas, particularly in markets that the company already has strong ties with in other regions, such as the electronics sector. In this respect, we are closely observing how these markets are evolving so that we can put ourselves in the optimum position to become a key supplier to them when demand increases to a greater level.

Could you explain the role of R&D in Dow Corning's Brazilian operations?

MJ: Innovation and technological development are at the heart of Dow Corning's corporate philosophy. Whilst the majority of our new product innovation – the development of entirely new molecules – is concentrated in the United States, we do maintain application development labs in Brazil at our Campinas plant. We have a strong track record of modifying existing molecules and tailoring products to meet our customers' specific needs. To give an example of the kind of development we carry out here, one of our Oil & Gas customers is currently exploring extremely deep offshore oil and gas deposits, and working at these kind of depths brings with it very particular challenges. To solve these issues our Brazilian lab team worked to produce a highly specialized de-foaming agent that had all the necessary properties to function with the new platform. Another exciting prospect for us is the growing importance of LED lighting systems, Dow Corning has already developed innovative silicone products with specific optical properties and thermal resistance that can be used in LED luminaires, and we are going to expand these offerings to the Brazilian market so that we can offer solutions to known industry challenges such as higher temperature requirements, higher lumen density requirement or very detailed design needs.

How does Dow Corning deal with the Brazil's perennial problem of sourcing adequate skilled labor?

AB: Finding skilled labor is certainly a challenge in Brazil, particularly when we are looking to the market for mature candidates to fill higher up positions, but although it is an area that deserves a lot of attention, it is not a major concern for the company. We have been in the country for many years and have a very well developed brand and a strong reputation, which is a great asset when recruiting new staff. Over the years we have established close connections with academic institutions and we generally try to bring new talent directly from universities and then develop their skills further through in-house training. We offer an attractive package to new recruits that goes above and beyond a competitive salary (although this is always an important factor), and thanks to this we enjoy a very high staff retention rate.

What do you believe will act as the main drivers of growth for Dow Corning in Brazil and where do you hope to see the company in five years from now?

AB: There is a lot of optimism in Brazil surrounding the forthcoming mega-events, and at Dow Corning we share this optimistic spirit. The construction of new infrastructure that is accompanying these events presents direct opportunities for the company, as many of our products will be used for applications such as building new stadiums. However, beyond these direct consequences, we are confident that these events will help promote a more systemic change in consumer behavior and that the country as a whole will begin to consume higher volumes of more sophisticated silicone-based products. Already we are starting to notice the effects of increased consumer spending power and silicone materials are starting to penetrate more deeply into the market. •

INTERVIEW WITH

Weber Porto

PRESIDENT
EVONIK SOUTH AMERICA

Could you provide us with a brief overview of Evonik, with a specific focus on your operations in Brazil?

Evonik is a global specialty chemicals company, headquartered in Essen, Germany, which holds very strong positions worldwide in all of its product lines, always placing itself among the top three major players in the market. In 2013, Evonik is celebrating 60 years of operational activity in Brazil and overall, we have come a very long way since the establishment of the company in the country. In the past, the overall instable business environment in Brazil made the market not very appealing to the corporation and due to global strategic decisions to divest various product lines and business divisions, Evonik Brazil lost some of its initial production capabilities. This development was further enhanced by the strong focus that the company was giving to the Asian markets at the time, which were expanding very fast and were considering essential to global growth. Evonik always considered Brazil and the other South American markets as ones with great potential; however, it was only during the late 1990s and early 2000s, that due to the reform policies adopted by the governments of Fernando Cardoso and Lula da Silva, Brazil's potential became reality and the country once again started to attract interest on the part of investors.

Evonik's renewed interest for Central and South America prompted a strong investment strategy for the region. Could you guide through what the main developments of this plan will be?

Evonik now has an investment plan for South America and Brazil that amounts to a total of €200 million and the strategy is to open three new production facilities in the future that will allow us to cover the market segments that we believe have great potential in the country. Brazil is very competitive when it comes to renewable materials, carbon sources, such as sugarcane and corn, and meat production (the country is currently the world's largest meat exporter). Given these strengths, Evonik Brazil is investing into a new Biolys® amino-acid production facility in Castro, in the state of Parana; there, we will work in partnership with Cargill, which will supply us with corn-based raw materials and infrastructure and we are confident that we will be able to replicate the successful model that we already have in place with them in the USA; also, this operation is aligned with Evonik's Health and Nutrition global megatrend.

The home and personal care market is also very interesting for us in Brazil, country which now occupies the third place in point of consumption of cosmetics worldwide, just behind the US and Japan. This is a sector that has been growing at a rate of 10% per year and projections say that it will continue to do so in the future as well. The reasons behind that are the growing income level of the population and the integration of over 30 million people into the new middle class of Brazil over the past years. These developments have led to a very well established local market in the country, where local companies have also high technological standards; since it is in Evonik's DNA to produce high quality products and specialty chemicals, we could not afford to miss out on the cosmetics market and to that end, we will be constructing a 50,000 mt capacity plant in Americana, focused on raw materials for the household and personal care sector.

Furthermore, the automotive industry, which grew 6.1% in 2012 in Brazil, is attracting more and more investments from companies such as BMW, Volkswagen and various Chinese producers. With national regulations regarding tire quality increasing, the green tire trend, which is already present globally with a rate of expansion of 18% a year, will become more and more important in Brazil. Evonik looks at the overall environmental impact of these tires and defines them based on the fuel consumption reduction that they achieve. This is done by substituting elements such as carbon black with precipitated silica, thus decreasing roll resistance of the tire and ultimately leading to fuel savings. Consequently, Evonik Brazil will be investing into a new precipitated silica plant in Americana, which will focus on our Ultrasil® product. The South American region, generally speaking, is gaining more and more attention from us and Evonik sees great potential in the Pacific Alliance, which comprises of Chile, Peru, Colombia and Mexico; other countries such as Costa Rica, Guatemala and Panama are also achieving good progress and we are excited about the possibilities of linking up with the US market, via Mexico. Finally, in Argentina, where soybean crops are at very high levels, Evonik is constructing a catalyst plant to serve the biodiesel production of the country.

Evonik places a lot of emphasis on global megatrends, and how the company can help serve these areas. Could you provide us with a few more details about the philosophy behind Evonik's strategy and future outlook?

The world population is growing, global health systems are improving, and people will eat more and better, consume more medicines and more cosmetic products: these are all facts, and through initiatives such as our new plant in Castro and Americana, Evonik is strategically placing itself to be aligned with this new health and nutrition reality. These same factors influence the availability of the planet's resources and we are trying to maximize their use: a good example of this is the Wind Explorer, a concept of an electric car for two people designed by Evonik, which weighs only 200 kg, uses our green tires and charges during the night through a turbine, using wind energy. The car, which works with a lithium battery coming from our joint venture together with Mercedes, represents a successful combination of resource-saving concepts. Finally, in a world that is so interconnected, it is important to have a global alignment of best practices and technologies. •

INTERVIEW WITH

Jean-Michel Denis, Pedro Mauro Pita & Werner Gurtner

JD: REGIONAL VICE-PRESIDENT LATIN AMERICA
PP: SALES AND MARKETING DIRECTOR SOUTH AMERICA
WG: SALES AND MARKETING MANAGER SOUTH AMERICA
TAMINCO

Taminco has been developing at a very high rate over the last ten years. Could you provide us with some more information regarding Taminco's recent history in the world and in Brazil?

Taminco Corporation is the world's largest integrated producer of alkylamines and alkylamine derivatives for use in the manufacturing of everyday products. We are talking about intermediary components in the manufacturing process of end products and that is the reason our brand name does not have that much visibility to the end-consumer. Taminco was founded 10 years ago as a carve-out from the UCB Group in Belgium. We experienced significant organic and acquisition-based growth over the years. In 2003 our global turnover was approximately $ 200 million and today, that has increased to more than $1 billion. In 2003 we were still primarily a European company but since 2006 we are a truly global company with two production plants in Europe, two in the US and three in China. We have also gradually expanded our portfolio of derivatives, now serving a wide variety of end-markets with a key focus on agriculture, personal and home care, water treatment, animal nutrition and energy. This places us in a very favorable position because as global economies get stronger, and as the income of the general population grows, there will be more and more demand for these products; this is also what Taminco has been seeing here, in Brazil, a country with great potential for us.

Taminco has three main divisions at a global level: Functional Amines, Specialty Amines and Crop Protection. How are these performing in Brazil and what has been the recent economic performance of your company in the region?

The year 2012, overall, was a very good year for Taminco, showing growth in all our divisions and end-markets. Also in the fast growing Brazilian market we continue to develop our activities in several end-markets, certainly in agriculture and animal nutrition but also in personal and home care and water treatment and other diversified end-products. Unfortunately, our growth in agriculture is impacted by the lengthiness of product registrations and the complexity of the agrochemical legislation in Brazil. That being said, we still participate indirectly in the agricultural sector, by providing intermediate products such as amines and solvents for the lamination of herbicides, which are used for most GMOs (Genetically Modified Organisms). Brazil will soon become the world's top soybean exporter, and that adds to its already consolidated status as a top corn and sugarcane producer; these factors further highlight the country's strategic importance for all of Taminco's crop-related products.

Taminco used to have production capabilities in Brazil, in Camaçari. What led you to stop producing in Brazil and what are the main challenges that you encounter in the Brazilian business environment?

A few years ago Taminco decided to shut down its operations in Camaçari for a number of reasons that depict some of the main problems Brazil has at a macroeconomic level in its business environment. First, the logistics costs were very high, and trucking companies were becoming more and more expensive, while their reliability was not that good due to the long distances (4,000 km) they had to cover to reach the southeastern region of Brazil, which is the main economic core of the country; cabotage was not a fully viable solution either since the frequency of the boats was not satisfactory. Secondly, there were very little incentives and tax reliefs from the part of the Brazilian authorities, which did not reduce the 15% import duties for our raw materials. Most importantly, all local raw materials are very expensive, since they are correlated with naphtha levels; ethanol, methanol, and the entire cost chain of production are costlier in Brazil than in the USA, for example. At the end of the day, it is cheaper for Taminco to produce its amines in its Louisiana plant and ship them to Brazil in their final form. These issues are problematic for many of the businesses in Brazil.

What are the competitive advantages that Taminco has and will your organization benefit from the economic boost that Brazil will be experiencing during the World Cup and Olympics Games in the near future?

Single events such as the World Cup and the Olympic Games will not have a significant impact on Taminco's activities in Brazil; rather, it is the growth of the Brazilian middle class and the overall rising financial health of the population that will help us develop our business units. Our paints applications could have benefited from these sporting events, but current Brazilian legislation does not impose low enough VOC levels for our products to become more relevant. Taminco's main competitive advantages are represented by the quality of its products and its service level to customers, its lean structure, its rapid lines of communication, its flexibility and its responsiveness; also, we are a market leader in the amine business and continue to invest in process improvements in all our plants and in product innovation through our R&D lab and many contacts with customers and research institutions globally. Sustainability and the trend towards green chemistry, although not fully mature concepts in Brazil, are becoming more popular and accepted ideas with each passing day. •

Pulp and Paper

Organic growth

With over 200 companies spread over 18 states, Brazil's pulp and paper industry is among the top five in the world and the current and planned investments for the sector are arguably impressive. Klabin SA will be investing BRL 3.2 billion into a 1.5 mt/y plant in Ortigueira, Parana, while Chilean manufacturer Empresas CMPC will be expanding its 450,000 mt/y capacity of its Guaíba mill to 1.3 mt/y. Fibria, formed by Votorantim Celulose & Papel SA's bailout of Aracruz Celulose SA is already operating a 1.3 mt/y plant close to Três Lagoas in Mato Grosso, a region that was also chosen by Eldorado to operate its 1.5 mt/y mill, a facility inaugurated in December 2012. Finally, Suzano, another major player in the industry, is also opening a 1.5 mt/y in Maranhao, in the northeast of the country. These developments have created opportunities for players such as AkzoNobel, Canexus and Peroxidos do Brasil.

Jaap De Jong, regional director for Latin America, AkzoNobel, provides more detail: "AkzoNobel registered a few milestones in 2012, the most important being our new Jupia pulp chemical island, which was a EUR 90 million project, one our biggest investment in Latin America ever. Located strategically next to the Eldorado Brasil Celulose pulp mill, it will supply, store and handle chemicals at a rate of 1.5 million mt/y to Eldorado. Moreover, AkzoNobel will also be opening another pulp related plant later on this year in Maranhao, which will work with Suzano Pulp and Paper."

Bruno Jestin, CEO of Peroxidos do Brasil, a hydrogen peroxide and peracetic acid business of Belgian powerhouse Solvay, talks about his organization's involvement in the market: "The pulp and paper sector is our main one. Our customers are investing heavily in it and we are here to help them in this direction. In June 2013 we started our first industrial mini auto-oxidation pilot plant in Curitiba in order to confirm the production of H2O2 at small scale (7kT/year to 15kT/year). Our goal is to sell this new concept to our biggest customers, close to their manufacturing facilities and most of our pulp customers are based close to forests, so they are in very remote locations."

Finally, Pericles Dos Santos, director at Canexus Brazil (the subsidiary of Canadian sodium chlorate and chloralkali producer, which has two plants in Espirito Santo) explains the reasons behind the industry's success in Brazil: "The pulp and paper industry in Brazil has been growing at 5% to 7% per year for many years now and the two main drivers to that are cost-related. First, it takes about seven years to harvest eucalyptus here in Brazil, where there is plenty of land and the climate is excellent, as opposed to North America, where you need 25 years for pine collection. Eucalyptus requires a smaller plantation area as well and transportation does not costs as much, so these factors together make Brazil one of the lowest cost producers in the world. Brazil mainly exports to Europe and Asia, so it is very dependent on how the world economy functions."

Arguably, there are risks associated to increasing the world market's capacity so suddenly and if the global economy slows down and demand and prices drop, some of these projects could be put on hold. Nonetheless, with current prices at around $800 per mt and worldwide low inventories, the stage seems set for expansion in the case of Brazil's pulp and paper industry and its adjacent businesses. •

Main Pulp and Paper Producers (2012)

Source: Associação Brasileira de Celulose e Papel (Bracelpa)

Pulp

COUNTRY	1 000 TONS
USA	50 351
China	18 198
Canada	17 073
Brazil	13 977
Sweden	11 672
Finland	10 237
Japan	8 642
Russia	7 519
Indonesia	6 710
Chile	5 155
India	4 095
Germany	2 636
Other	10 376
Total	166 641

Paper

COUNTRY	1 000 TONS
China	102 500
USA	74 375
Japan	26 083
Germany	22 630
Sweden	11 417
South Korea	11 333
Canada	10 751
Finland	10 694
Brazil	10 260
Indonesia	10 247
India	10 242
Italy	8 664
Other	90 789
Total	399 985

INTERVIEW WITH

Bruno Jestin

CEO
PREOXIDOS DO BRASIL

Hydrogen peroxide constitutes Peroxidos do Brasil's main product, followed by peracetic acid, but you operate in a wide array of markets. Which of these are the most important to your organization?

The pulp and paper sector is our main one, and it is a growing market in Brazil, expanding at six or seven per cent per year; customers are investing heavily in it and we are here to help them in this direction. It is quite different from Europe and the US, where the industry is shrinking because of its poor competitiveness. Beyond pulp, we serve ten or fifteen markets of roughly equal weight. Peroxide goes into whitening and cleaning products, and for example can be used for sewage and the epoxidation of soybean oil. There are many more applications, and Peroxidos do Brasil has individuals dedicated to looking for new ones, which we come out with every year. We try not to neglect small customers, because, although spending time with them costs a lot of time and money, they might provide us with a new application that comes to represent large volumes in the future; this already happened with the mining industry.

Peroxidos do Brasil has been undergoing an important recent expansion. Could you provide us with more details about this and the strategic important of this move for the company?

Peroxidos do Brasil has one plant in Curitiba, from which we deliver H2O2 to the whole of South America. Our facility is the Solvay's biggest commercial plant in the world, and last year we expanded its capacity to 180 kilotons. In June 2013 we started our first industrial mini auto-oxidation pilot plant in Curitiba in order to confirm the production of H2O2 at small scale (7 kT/year to 15kT/year). Our goal is to sell this new concept to our biggest customers, close to their manufacturing facilities. This innovative concept will bring a lot of advantages to our customers like a better guarantee of supply as road and rail networks in Brazil are not enough developed. Mostly our pulp customers are based close to forests, so they are in very remote locations. However, we will have to negotiate with each customer separately, taking into account its specificities. Our facilities would be fully dedicated to them, so we would require long-term stability and in such locations the customers would need to provide us with some raw materials. Currently we are using in-house capabilities for our expansion plans. Fortunately, Peroxidos do Brasil has managed to develop and maintain its own experts. Staff turnover is very low, because our pay is very good compared to the market and individuals have the opportunity to progress further within the Solvay group. Turnover was 10% last year, which is low for Brazil – and this happened at a time when I arrived and made some personnel changes within the company.

What is the strategic importance of Peroxidos do Brasil to Solvay, how have you been performing recently, and what can you tell us about your international presence and reach?

Our research program at Curitiba is done in partnership with Solvay. Once we are able to build our first commercial mini-plant, Solvay will also be able to employ the concept outside of South America. Our financial performance in the last couple of years has been acceptable. A large portion of our recent cashflow has been invested in our expansion programs in order to support the growth of our customers. Our biggest markets after Brazil, are Chile and Argentina where we have a logistics terminal in each of these countries in order to strengthen our supply and then Peru and Colombia. We can follow companies from country to country, and there are some Chilean companies whose Brazilian subsidiaries we serve here. I am particularly impressed by Chile: it looks to be a very stable and well-organized country, and unlike in Brazil the government is pushing for a very open economy. Peru is also now growing well, having solved the terrorism problem and pledged to instate similar liberal economic laws. Peroxidos do Brasil uses distributors, across South America and even in Brazil, for some of our smaller applications, such as the use of paracetic acid as an antiseptic agent in hospitals.

Apart from logistics, which other factors of the "Brazil Cost" influence your operations the most? Are Brazil's high gas and electricity prices a problem?

Gas and electricity are our most costly raw materials and I do worry about them, as prices continue to rise with a direct impact on our profitability. It is difficult to pass all of these cost increases onto customers: ultimately, Peroxidos do Brasil must compete with companies in the US, where the price of gas is much lower. The government is concerned about energy prices, but the most important message I want to convey is that if it does not pay enough attention to them the Brazilian chemical industry will be strongly damaged. I see these costs as one of the reasons for Brazil's declining balance of payments. Implementing more protectionist policies is not a long term solution – really, the country needs to invest more in competitive power production and we do see it happening, but at a slower rate than we would want to. •

Industrial Gases

Safety in number of markets served

The industrial gas market in Brazil is one of the most crystalized sub-segments of the chemical industry, containing four multinational players (Linde Gases, Air Liquide, Air Products and Praxair's White Martins) and one local company, IBG. Even though the global economic crisis and Brazil's fluctuating industry (0.8% contraction in 2012) negatively affected industrial gas companies, the sector is still seeing growth, taking advantage of profitable markets like pulp and paper, healthcare and food packaging.

"Both the steel and chemicals sectors are struggling in Brazil, while the food sector, oil and gas and healthcare are growing as Brazilian habits change. One benefit of operating in the gas industry is that even in downturn situations there are always sectors still moving in the right direction," stated Magnus Karlson, general manager of Linde Gases in Brazil.

Moreover, industrial gas companies are also indirectly benefiting from governmental legislation, as Marcelo Fioranelli, general director of Air Liquide in Brazil, explains: "Brazil is incrementally tightening its diesel regulations and as of last year, all new trucks and buses manufactured in the country must meet Euro-5 standards. This is putting pressure on the oil and fuel industries, and it is also driving up the demand for oxygen and hydrogen."

Brazil's aging population has triggered a boom in the healthcare industry and increasing hospitalization costs have consolidated the home healthcare market. "Our healthcare business expands by 15% to 20% per year, and the population will continue to age," said Fioranelli. Air Liquide commenced operating in Brazil in 1945, and currently, the company is leveraging the new geographical distribution of wealth in the country. "Brazil is not China, but there are still 30 or 40 million new members of the middle class. Demand for industrial gases is increasing in the interiors of Sao Paulo and Parana and this is bringing us new opportunities," explained Fioranelli.

German company Linde Gases is another player that has manifested strong interest in the healthcare market: "The health care regulatory framework is changing rapidly and we had to make significant investments to upgrade our stations to fulfill new requirements. Brazil copied a lot from the FDA, and these news laws are now being applied. At a global level, Linde Group recently acquired Lincare Holdings, a very successful company in the homecare market, and we hope that this acquisition will help drive growth in the homecare sector in Brazil as well," explained Karlson.

The German company achieved a growth of around 5% during 2012 and it continued to expand its footprint in Brazil with a $50 million air separation unit in Curitiba, in the Paraná state. A market segment that Linde is particularly targeting is the food packaging industry, as Karlson relates: "In the food sector, a booming industry in Brazil, we are using gas (liquid nitrogen or CO2) to freeze food; the freezing process is fast, hygienic and efficient; it is much more efficient than with conventional technology."

Air Products has approximately 200 on-site plants in Brazil that range from small sizes to capacities of 200 mt/y, in the case of its galvanizing plant for Ar- celorMittal, in the state of Santa Catarina. In June 2012, Air Products acquired 67% of Chilean industrial gases company Indura for a record $908 million, a move that significantly increased the company's Latin American presence. In Brazil, Air Products is targeting the merchant gases market and taking advantage of its dual gases/chemicals structure, as Renato Montagnini, general manager for packaged gases at Air Products Brazil details: "The majority of our sales stem from our merchant division, which is divided between liquid bulk and on-site customers. The advantage of Air Products supplying both industrial gases and chemicals is that we can serve the industry with a broader product line."

There are sufficient applications and new markets for industrial gas companies in Brazil to exploit in order to maintain growth, but even so, the sector is not without challenges. "In Brazil, distribution and logistics play an important role due to large distances and poor road infrastructure. Consequently, our logistics costs are very high, since we use road transportation for about 90% of our business. Energy costs also tend to be higher in Brazil, likely due to inefficiencies in production," noted Montagnini.

Nonetheless, the healthcare, automotive, food and oil and gas industries should provide enough ground for the industrial gas sector to keep expanding steadily in Brazil over the course of the next years. •

INTERVIEW WITH

Magnus Karlson

GENERAL MANAGER
LINDE GASES

Since we last met with Linde Industrial Gases in 2011, what have been the company's main achievements?

From a general market perspective, Linde Gases began to feel the economic crisis in the third quarter of 2011, and we remain in a slowdown today. In 2012, we experienced a growth rate of over 5%, which was respectable, but far from the double-digit growth that we originally had hoped for. That said, we continued to make several gas-related investments, such as the contract that we won with Peróxidos do Brasil in Curitiba. In this 50 million euro project, Peróxidos will receive part of the gas via pipeline, and the rest will be supplied to our merchant and bulk customers. The project involves the first and only air separation unit in Paraná state and overall, we have great expectations for the Curitiba market. Our clients will receive a more reliable supply of gas and they will benefit from lower costs by avoiding the transportation of gas from Sao Paolo to Curitiba.

In 2011 you stressed the importance of developing new applications for clients. Could you elaborate on any new applications that have come online recently?

Our competitive advantage in the Brazilian market stems from our applications, and we are constantly on the edge of new technology in this regard. We have 30 engineers in Brazil that work closely with our R&D center in Germany to develop these new applications. In the food sector, a booming industry in Brazil, we are using gas (liquid nitrogen or CO2) to freeze food, and we are by far the dominant player in this field. The freezing process is fast, hygienic and efficient; it is much more efficient than with conventional technology. We also have important applications for the steel sector. By adding oxygen to a steel furnace, we can improve its productivity by 20%. We sell the application to steel companies, guaranteeing a productivity improvement in the contract, and the client signs a long term contract with us for gas delivery. Another very successful application is our use of oxygen to treat waste water; we even have Brazilian patents in this area. We also have some ongoing projects with hydrogen fuel, using German technology that we developed in partnership with the manufacturers. The hydrogen fuel sector is moving forward in Brazil, and I am optimistic regarding its application with buses. On the other hand, LNG is moving further ahead globally, but in Brazil it is still in the pilot stages.

Another niche that we have recently developed is increasing collaboration between Linde Gases and Linde Engineering, which helps build the chemical plants. Traditionally, these two teams have been separated, but over the last two years we have tried to obtain greater synergies by working together. How this translates to the Brazilian market is that in negotiations with big companies we can now act not only as a gas supplier, but also as a plant supplier, which is a powerful business model and Linde Engineering installed a large number of hydrogen plants in Brazil. Combining the business models of the two teams provides companies with greater opportunities for partnering with us.

What is the industry breakdown of the clients that Linde is reaching at the moment?

Our business is broken down into tonnage, Merchant and Packaged Gas (MPG), and health care, with the latter being divided into institutional and homecare. The health care regulatory framework is changing rapidly in Brazil, and we had to make significant investments to upgrade our stations to fulfill new requirements. Brazil copied a lot from the FDA, and these news laws are now being applied. At a global level, Linde Group recently acquired Lincare Holdings, a very successful company in the homecare market, and we hope that this acquisition will help drive growth in the homecare sector in Brazil as well.

Steel, metallurgy and chemistry are important sectors to us, and we have a number of important pipeline customers in these industries. However, both the steel and chemicals sectors are struggling in Brazil, while the food sector is booming as Brazilian habits change. Health care is also increasing, as is manufacturing, as a result of the rapid growth in the automotive market. The oil and gas sector is also driving growth with the construction of platforms and the shipyard industry. One benefit of operating in the gas industry is that even in downturn situations there are always still some sectors moving in the right direction.

Could you tell us more about the services that Linde offers to its customers in the Brazilian market?

In general, Brazil has experienced difficulties with providing high-quality services, and as a result companies that can get services right can really succeed in this market. We are centralizing a lot of our activities, which will help build our service lines. We offer a delivery service to our customers, as well as the opportunity of buying gas, distributing gas, helping customers manage their stock, and other services related to the reliability of the products. As a German company, we certainly have an internal push towards CCS technology, but so far there is no external push from the Brazilian market for the use of this technology. Everything we do internally matches with our corporate view on sustainability; for example, the investments that we do in new sites reduce truck kilometers. Our gases are also helping a lot on the sustainability front, as they have a much lower environmental impact than chemicals. •

INTERVIEW WITH

Marcelo Fioranelli

GENERAL DIRECTOR
AIR LIQUIDE

What have been some of your acquisitions in recent years and does Air Liquide's geographical redistribution in Brazil relate to the rise of the middle class across the country?

Air Liquide made three or four important acquisitions in the healthcare market. We have a strong focus on home healthcare, which I am not sure is the case with all of our competitors. At the same time, we internalized an important portion of our industrial sales that was previously done through dealers. This required better infrastructure and logistics, so we doubled the number of our production and distribution centers in Brazil to 30. Brazil is not China, but there are still 30 or 40 million new members of the middle class. Demand for industrial gases is increasing in the interiors of Sao Paulo and Parana State. Some cities in Brazil have changed enormously in the last ten years and this is bringing us new opportunities. Until five years ago Air Liquide was greatly concentrated on Rio de Janeiro, Sao Paulo and some cities in the south; now we are present in areas like the northeast with above-average growth. Brazil's growing medical expenses also relate to another dramatic demographic change: we are no longer a very young country. Our healthcare business expands by 15% to 20% per year, and the population will continue to age. Today, just over 10% of Brazilians are over 60; the proportion will rise to 20% in 2030 and 35% in 2050. Retirees and people suffering from chronic diseases want to be treated at home, and Air Liquide as a world leader in home healthcare, is already taking care of 1 million patients worldwide.

What potential does Air Liquide see in Brazil's fertilizer and bioduel sectors?

Air Liquide is interested in Brazil's fertilizer sector and we are working close with an important player in this segment. We intend to stay close to and serve it´s needs, whether by selling it our technology, licenses or products. This is our first big collaboration with the producer, although we already supply it with specialty gases. The engineering technologies Air Liquide will provide will come from our hub in Frankfurt.

We see the potential for biofuels in Brazil and have a small R&D team following developments. Air Liquide holds technologies in the sector through our acquisition of the engineering company Lurgi in 2007. As usual, development greatly depends on public incentives, and there are also some technical constraints to be overcome. Many companies and universities are investing in sugarcane fuels, which could lead to strong demand for industrial gases: obviously we are following this area and researching it internally.

What is the strategic importance of Air Liquide's Brazilian and South American operations to the company at a global level and how has this been evolving over the past years?

Brazil is inserted in a major Zone, that we call Americas which accounts for 22% of the Group's sales. We are the market leader in Argentina and our Chilean company is growing fast; there are also small operations in Uruguay and Paraguay, the first South American country we entered. I am in charge of Paraguay in addition to Brazil, and the other operations are run separately. This region is growing much faster than average – our business here has been expanding at double-digit rates in recent years. Air Liquide is now present in more than 80 countries, of which Brazil is an important country for the Group. Developing economies represented 23% of Air Liquide's sales in 2012, up from around 16% in 2009. This is a big change, reflected by the increased support from the group we are seeing here. For the first time South America is now represented by a member of Air Liquide's executive committee, a sign of the region's growing importance.

Are you seeing increased regulations on sulfur levels for transport fuels in Brazil and do you see the hydrogen market expanding in the country?

Brazil's hydrogen and oxygen market for this segment have been expanding visibly over the past few years. We´ve been working on some projects in the sector.. Brazil is incrementally tightening its diesel regulations and as of last year, all new trucks and buses manufactured in the country must meet Euro-5 standards. This is putting pressure on the oil and fuel industries, and it is also driving up the demand for oxygen and hydrogen.

What are some of the core competencies and differentiators that Air Liquide benefits from and what is your vision for the future of the company in Brazil?

One differentiator is the way Air Liquide's manages its healthcare business in Brazil and the quality and dedication of our team gives us the edge; we also have a very wide range of services to offer hospitals. Safety, reliability and quality remain at the forefront of our commitment to excellence. Another advantage arises from Air Liquide's concern toward developing and retaining talent. We are committed to diversity within our workforce, bringing in more women and people from other areas and even abroad. We want our double-digit annual growth in Brazil to continue, while we still maintain our competitive advantages and geographical expansion. We aim to grow faster in the north and northeast; these will be increasingly important regions in five years' time. 2013 is a challenging year, but we will not lose our long term perspectives. We are not interested only in volumes; the quality of sales is very important, long-term partnership with our customers is also key, and our focus on the end-user will intensify. •

INTERVIEW WITH

Renato Montagnini

MANAGER
AIR PRODUCTS

Could you elaborate on the products that Air Products supplies for the Brazilian market? What advantages or synergies has the company derived from supplying both industrial gases and chemicals?

Air Products supplies primarily Oxygen, Nitrogen and Argon, followed by Hydrogen and Helium. In Brazil we supply gaseous Hydrogen while in US we also supply liquid Hydrogen. Here in Brazil, we also supply packaged gases. These major products are responsible for more than 80% of our sales, and the majority of our sales stem from our merchant division, which is divided between Liquid/Bulk and Packaged Gases. We also have a variety of specialty gases like Krypton, Neon, Acetylene, CO2 and CO. We have a competitive advantage in packaged Hydrogen and Nitrogen plants, as we are able to serve these products at a lower cost than our competitors.

The advantage of Air Products supplying both industrial gases and chemicals is that we can serve the industry with a broader and more diverse product line. Some of our buyers are customers in both our industrial gases and chemicals segments; this allows us to take advantage of synergies and strengthen our reputation among clients. Our differentiating factor is not necessarily in the molecule that we produce, but rather in our applied technology and the service that we provide. Our customers come to us because they appreciate our process expertise and experience, which can either help improve their product quality or save costs.

Our merchant gases are directed towards small to medium sized operations, because the large operations go into on-sites. The most economical way to serve large customers is to understand their needs in terms of product quality, usage and pressure and build a tailor-made plant. Air Products has its own internal engineering, maintenance, and production so we can provide a full range of services. Air Products spends millions of dollars per year in research and development, which largely comes out of our labs at our headquarters in Allentown, Pennsylvania. In Brazil we have a division conducting 'applied research,' which allows us to apply our innovative solutions to meet customers' specific needs. We have a culture of continuous improvement and best practice sharing, changing our products for different geographies.

What is the importance of the Latin American continent to Air Products globally, and which are some of the markets in which Air Products has experienced the fastest growth?

Air Products has recently started to increase its attention to Latin America and capitalize on the vast opportunities that exist here. In June 2012, Air Products acquired a majority stake in Indura S.A.; this acquisition will have positive effects on our Brazilian operations as the integration efforts continue.

In terms of the fastest growing industries in Brazil, metals, pulp and paper and glass are experiencing significant growth. The steel mills have slowed down somewhat due to the slowdown in Chinese markets, but in the fabrication segment there is still a growing industry in Brazil. There is also significant potential in the automotive and aerospace industries in terms of metals production. Another important market for Air Products is Offshore.

What are the main challenges of operating and supplying in Brazil compared to other countries? What measures would you like to see implemented by the government that may alleviate these concerns?

In Brazil, distribution and logistics play an important role due to the large distances and poor road infrastructure. As a result, our logistics costs can be very high, since we use road transportation for about 90% of our business. We have seen significant improvements in road infrastructure over the years, although it has not progressed as rapidly as we would have liked. Energy costs also tend to be higher in Brazil, likely due to inefficiencies in production. One factor that has resulted in higher fuel costs in Brazil is the tax structure; both Air Products and our suppliers pay a lot of taxes, and inserting this into the supply chain results in significant additional operating costs.

Do you agree that the recently imposed emission control regulations for heavy load trucks could represent a potential for the use of hydrogen as a transport fuel?

The use of hydrogen as a transport fuel for buses and cars is only just starting in Brazil. Only a small number of buses are currently being fueled by Hydrogen, and there is nominal commercial use for the fuel as of yet. Hydrogen is a great fuel in terms of its low emissions, and significant investments are required to make it economically viable. Air Products is a global leader in hydrogen fueling and related infrastructure. We do see a future in this sector in Brazil.

Where do you expect Air Product in Brazil to be five years from today? What kind of growth strategy is the company pursuing?

Five years from today Air Products will be a larger company in Brazil, as we have plans to continue to grow. We see Brazil continuing to experience significant development in sectors in which industrial gases have an important role to play, and we are confident and well positioned so that Air Products will be an important part of this growth. •

Reaching Demand:
Distribution and Logistics in Brazil's Chemical Industry

"Brazil is an expensive country to do business in and the current main factors that affect Coremal are the lack of adequate infrastructure, the cost of labor and the complexity of the tax system (over 70 different taxes). Four years ago, given the upcoming events such as the World Cup and the Olympics, expectations were very high for the country to develop and unfortunately, not enough has been done. The stadiums will be finished but the overall infrastructure of the country is far from perfect. Brazil has 8,000 km of coast and compared to that, the number of ports we have is very small; developments in ports systems would not only help out the infrastructure, but also stimulate international trade and we are hoping to see an improvement, now that the law regarding private investments in ports has been passed. Moreover, railways, which are essential in Europe and the US, are limited in Brazil and mainly dedicated to iron ore."

- Romero Dantas, Director, COREMAL

Courtesy of Elekeiroz

Global Business Reports
Industry Explorations

Chemical Distribution

Reaching the end user

While the domestic producers of Brazilian chemicals may have seen their previously rapid growth stall in 2012, the distributers of those chemicals have experienced a continuation of the steady growth they have enjoyed for the past few years.

The market-large and complex as it may be-provides ample opportunities for those with the necessary capacity and expertise, and the presence of multinational powerhouses such as Brenntag and Univar is no surprise. Yet while these international companies are constantly expanding their footprints and increasing their market shares, local players still dominate the scene.

The top position remains held by giant QuantiQ, which is undergoing ownership changes, as Braskem announced earlier this year that it intends to divest its chemical distribution business. The rest of the market is populated with local, mostly family-owned businesses, such as M. CASSAB, Coremal, Makeni, Bandeirante Brazmo and Quimica Anastacio. A growing presence in the landscape, however, is represented by specialty chemical distributors, with players such as D'Altomare Quimica and Dinaco focusing their efforts on niche markets.

The quality of services provided is in compliance with international standards, and a significant development in this sense was the establishment of the Responsible Distribution Process (PRODIR) certification by The Brazilian National Distributor Association (ASSOCIQUIM) in 2003. PRODIR was elaborated in close partnership with the USA's National Association of Chemical Distributors (NACD) and the The Canadian Association of Chemical Distributors (CACD) and this assured high exigency levels for environmental health, safety and security performances on the part of the Brazilian distributors.

One factor responsible for the distributors' success in 2012 was related to Brazil's domestic production of specialty chemicals, which is still sub-par. This led players in the distribution market to shift their portfolio to specialty chemicals over the past decade, as Reinaldo Medrano, commercial director of Makeni Chemicals, explains: "In 2009, we had a ratio of commodities to specialty products of 8:2, and by 2012, the proportion had changed to 6:4. Our target for the year 2015 is to have a balanced portfolio, of 50% commodities and 50% specialties."

Other big names such as Bandeirante Brazmo and M. CASSAB are following similar strategies and while import taxes burden the final price to the consumer, the market has been willing to pay the extra price so far. Meanwhile, companies with an original specialty chemicals DNA, such as D'Altomare Quimica and Dinaco, are flourishing and do not show any signs of slowing down over the next few years.

Endvar Rossi, director of life sciences at D'Altomare Quimica, detailed the benefits of focusing on the specialties market: "The advantage of specialties is that you have a much more predictable way of running your business, because you are essentially avoiding price volatilities. The more unique a product is, and the more difficult it is to sell, the better it is for our business; the hard part is at the beginning, when you have to penetrate the market and educate it in respect to the advantages that these new products offer, but once that is achieved, you are safe from cheap competition from countries like China."

External factors are not the only ones to take into consideration, as the internal culture of specialty companies needs to be different as well: "Dealing with specialties prompts a certain type of company philosophy and structure: the people that you need to hire need to be patient and must be up to the challenge of seeing projects last more than a year sometimes," said Alexandre Kaplan, president of Dinaco Especialidades Quimica.

Overall, this shift triggers a higher cost structure for the distributor, which needs to provide specialized training courses. Gradually reducing commodities in favor of specialties is a clear trend but proficiency takes longer to achieve for big companies that are used to the commodity game. Romero Dantas, director of Coremal, explains: "It is easier said than done to change a company's focus from commodities to specialties. While the margins for specialties are better and their price volatility is lower, the cost structure is bigger due to all the human resource training and the increased length of the niche sales projects."

Coremal stands out as one of the companies with the most national products in its portfolio, a feature that allows it keep only a 20 day long inventory, dramatically less than the 60 day industry average.

Chemical distributors have also benefited from the gradual global- ization of Brazil's chemical industry and producers are outsourcing more and more of their distribution business to the specialized companies due to the cost-effectiveness that these achieve. The second global trend in action in Brazil relates to the overall chemical distribution proportion in the country's total market, as Silvio Fagundes, general director of Gafor Distribution, a relatively new entrant in the market with strong growth rates in recent years, explains: "Within the national distribution industry there is still a lot of room for expansion; at the moment chemicals only account for around 10% to 11% of total goods sold, whilst in the USA and Europe the numbers are closer to 30% and 20%, respectively. Distributors have done well in the past years, increasing their share in the total distribution in the country by 5% in the last six years."

Due to their global nature and force, these two factors will undoubtedly continue to provide solid ground for the continued expansion of chemical distributors in Brazil.

Significantly driven from an economic perspective by its national consumption, Brazil has had several markets performing very well in 2012, with home and personal care growing 6% and the automotive industry expanding 6.1%. These developments have led to distributors increasing their revenues based on the HPC and Paints and Coatings products, which have seen higher demand over the course of the last years. Companies such as Quimica Anastacio, that have a strong HPC focus are acknowledging the growing importance of other regions than the south and southeast of Brazil and this year, for example, the company is opening two distribution centers in the northeast and in Amazonas, in Manaus.

The development of the aforementioned markets was also noticed by Joao Miguel Chamma, CEO of Bandeirante Brazmo, one of top five distributors in the country that has a history of over 60 years in the country and which operates across 35 market segments: "Paints and coatings, in which we also include inks, resins and thinners, represent a very good market for Bandeirante Brazmo. Last year, this segment only grew 1.5%, but given the fact that the average growth for the industry was negative, we can say that it was a good year for paints and coatings, generally speaking"

Nonetheless, Brazil is not entirely a land of milk and honey for its chemical distributors. The poor level of infrastructure development and the tremendous distances between cities in Brazil (ranging to 4,000 km at times) directly impact distributors, who rely on road transportation for more than 90% of their business. Lack of proper port infrastructure also affects distributors, who often import a large part of their product offering. Furthermore, a new truck drivers' law, commonly known as the "Resting Law", which came into play in February 2013, has raised freight costs 20% to 40% for the distributors. The law requires truck drivers to rest for 30 minutes after four hours of driving and additionally, a driver may be behind the wheel for only eight hours before he must rest for eleven hours.

To add to this, the complexity and the high level of the taxation system in Brazil is another issue that has proven to be problematic as noted by Chamma: "The infrastructure in the country is very poor and transportation is largely based on trucks, which makes it very hard and very expensive for goods to be moved nationally, given the long distances that need to be covered. Bandeirante Brazmo and other distributors fully understand the need for more safety and higher quality standards, especially since we are dealing with dangerous goods, but the new trucking legislation has increased costs and delivery times for us. Also, the extent and the complexity of the taxation system in Brazil are exaggerated and 2013 has already brought changes in the Tax on Circulation of Goods and Services (the ICMS tax), changes that we are still trying to cope with."

Lastly, bureaucracies in the customs' clearance process and labor costs, which can represent up to more than 100% of an employee's wage, also contribute to what is commonly known as the "Brazil Cost". Even so, some distributors, such as Quimica Anastacio are turning some of these obstacles into opportunities, as Jan Felix Krueder, general manager of Quimica Anastacio, notes: "We deal a lot with the paperwork related to importing in Brazil and that is a service that many of our customers want since they can't afford the risk of delays. In summary, our work is done either through local supplying (for Brazil) or through an indent basis, with commissions (for other Latin American Countries). In the end, the complexity of Brazilian licensing and regulations

→ 71

INTERVIEW WITH

Joao Miguel Chamma

CEO
BANDEIRANTE BRAZMO

Bandeirante Brazmo is one the leading companies in chemical distribution in Brazil, with a history of over 60 years. Could you provide us with an overview of the company's development and its performance during the last years?

Bandeirante Brazmo was one of the first companies in the chemical distribution business in Brazil, and its foundation coincided with the beginning of the chemical industry as a whole in the country. Nowadays, 60 years after the establishment of the organization, Bandeirante Brazmo is one of the top five chemical distributors at a national level and our overarching strategy that has brought us here is characterized by a broad, flexible and diversified portfolio, which includes commodities, semi-commodities and specialty chemicals. Currently, we cover 35 market segments and we focus exclusively on the domestic market, because we believe there is a lot of work to be done in Brazil but, perhaps 10 years from now, we will also consider a move into foreign markets. Our customers are scattered all throughout the country and they are usually medium and small sized Brazilian companies; in order to be close to our clients, Bandeirante Brazmo has logistic, commercial and operational activities all along the East coast of Brazil, which constitutes the core of the chemical industry. When it comes to our suppliers such as Braskem, Dow Chemical, Rhodia, Petrobras, Eastman, BYK or Arkema, that we also consider our customers, our strategy is to build long standing trusting relationships. The industry of transformation in which we operate in has seen several obstacles during the last three years but nonetheless, Bandeirante Brazmo has grown roughly 10% each year during this period, due to the general flexibility of the distribution market.

Specialty chemicals account for a large portion of the $29 billion import deficit of the Brazilian Chemical industry. What is the proportion of imports to local products that you have and what are the most important main market segments that Bandeirante Brazmo operates in?

Paints and coatings, in which we also include inks, resins and thinners, represent a very good market for Bandeirante Brazmo. Last year, this segment only grew 1.5% but given the fact that the average growth for the industry was negative, we can say that it was a good year for paints and coatings, generally speaking. Home care and personal care products have also seen very good growth in the last years (five to eight %) because the spending income of the population has been increasing, and Brazil is probably the second or the third market for cosmetics globally today. Another sector that is very relevant for us is the basic chemical industry one, for which we provide raw materials. Lastly, the auxiliary market, composed out of lubricants, textiles and ceramics is also one in which we have considerable operations in. Bandeirante Brazmo currently imports 100% of its specialty chemicals since the local production of these items is very limited; specialty chemicals represent roughly 20% of our portfolio. Total imports equate to 35% of our products, since over 90% of all our commodities are acquired locally.

Aurelio Rocha from BYK was mentioning infrastructural issues as his main concern in Brazil. Furthermore, in August 2012, a new trucking legislation was adopted, that sets higher standards of quality and safety for this type of transportation, while increasing its overall costs. In this context, what are the main obstacles that Bandeirante Brazmo confronts itself with in the Brazilian business environment?

Brazil's economic expectations in 2012 were not achieved and while the country's GDP growth was positive at 0.9%, its industry development diminished by 2%. The exaggerated strength of the national currency has been an issue for a while and even though things are improving on that front, the 2:1 ratio to the US $ is still not good enough. The problem is that Brazil's growth over the last 10 years has been driven by consumption and there is a limit to how much that can continue to last. The infrastructure in the country is very poor and transportation is largely based on trucks, which makes it very hard and very expensive for goods to be moved nationally, given the long distances that need to be covered. Bandeirante Brazmo and other distributors fully understand the need for more safety and higher quality standards, especially since we are dealing with dangerous goods, but the new trucking legislation has indeed increased costs and delivery times for us. Also, the extent and the complexity of the taxation system in Brazil is exaggerated and 2013 has already brought changes in the ICMS tax (Tax on Circulation of Goods and Services), changes that we are still trying to cope with.

How will the structural programs such as Minha Casa, Minha Vida and the future sporting events such as the World Cup (2014) and the Rio Olympics (2016) affect the business of Bandeirante Brazmo?

These are all very important opportunities for in Brazil and only the Minha Casa, Minha Vida program itself can add a 2% growth per year to the paints and coatings industry. The issue is that although these programs and events will indeed bring benefits, they will do so at a slower rate and extent than originally planned. The housing program should have happened in three years and now we are looking at a seven year timeline; the World Cup is next year, but we have not seen the projects being finished or being carried on at maximum capacity; infrastructure works will also be delayed. At the end of the day, it's frustrating to see Brazil not taking full advantages of these initiatives. •

serves as an opportunity for us, since we have the knowledge to untangle it."

The year 2013 also brought significant currency fluctuations and the Brazilian Real has seen a steep depreciation in comparison with the US dollar, as described by Mario Grumach, founder of Sul Atlantica, a Rio de Janeiro-based chemical distributor focused on upstream basic petrochemicals: "The year started with the US dollar being worth 2.04 Brazilian reals and by March, the rate had gone down to 1.94. However, since then, we have a seen a significant depreciation of the currency, which dropped by about 11% to 12% during the course of a month, between May and June, all the way to 2.27 BRL for the dollar; although good for our exports, this affected companies that base their business on imports."

The expectations that existed four years ago related to the in- vestments in infrastructure generated by the World Cup (2014) and Rio Olympics (2016) were not met and the complex taxation system continues to be a problem for doing business in Brazil, at a general level. Although interest rates reached historically low levels of 7.25% in 2012, the cost of money is still high in the country and signs that the Central Bank of Brazil's Monetary Policy Committee (COPOM) will increase them once again exist already, as interest rates climbed to 8.50% in July 2013. Furthermore, import taxes and the perspectives of their further increase somewhat endanger the margins of imported products.

Marco Antonio Quirino, president of Univar Brazil, perfectly exemplifies a train of thought regarding import taxes commonly encountered among Brazilian distributors: "Raising import taxes would be a terrible mistake, and would prove to be extremely damaging to the industry in the long run. Such practices remove the incentives to innovate and to reduce costs, and the end result would be to render our domestic industry obsolete, and the country even more dependent on imported finished products. Rather than raising taxes once again, the government should be working to simplify and restructure the tax system as well as to invest in vital infrastructure."

This being said, chemical distributors in Brazil will continue to benefit from the demand of high margin specialty chemicals, for which domestic production is very limited. National consumption levels will keep rising, as a direct result of the increasing prosperity of the new Brazilian middle class, a development which drives key markets such as home and personal care, food and the automotive sector. Additionally, major chemical producers will continue to outsource more of their distribution and through their annex services such as solvent blending and testing, the distributors will gain more and more business.

Perhaps the best proof of the general optimism existent among chemical distributors is exemplified by M. CASSAB, one of the largest companies in the field in Brazil, which has a history of 85 years in the country. M. CASSAB's ambitions are to double up its already impressive volume of business by 2017 and consequently, the business is expanding its footprint with a new distribution center in Cajamar, Sao Paulo. Fernando Abrantes, managing director of M. CASSAB, talks about the company's goals, vision and the confidence in the market: "We are now on a journey to- wards the year 2028, when our organization will be celebrating its centennial and our mission is to prepare the company with a cohesive, strong and unified vision for this landmark date. To this end, we are focusing on a development program structured into three strategic stages, each five years long. We believe that there is plenty of room to grow in industries such as pharmaceuticals, cosmetics and human nutrition, where demand will keep increasing throughout the next years and together with our part- ners, we are ready to seize these opportunities. M.CASSAB will continue to develop itself as a more homogenous entity, rallying its people together. We need to have people dreaming the same dream and they need to be passionate about their work so that new ideas can arise. Every single one of our employees is acting as an ambassador for M.CASSAB and we all need to walk down the same path in order for us to get to the end."

Arguably, the fundamentals for growth for the chemical distribution market in Brazil are strong enough to outweigh the challenges and looking ahead, it's rather sunshine with a slim chance of rain than the opposite for the players involved in this sector of the chemical industry. •

INTERVIEW WITH

Endvar Rossi & Aline Zopetti

ER: DIRECTOR LIFE SCIENCES
AZ: MARKETING DIRECTOR LIFE SCIENCES
D'ALTOMARE QUIMICA

Could you provide a brief introduction to D'Altomare Quimica?

Today D'Altomare has three main areas of activity, each with its dedicated technical, marketing and sales teams. Our Life Sciences division deals with home and personal care and the medical and pharmaceutical sectors, accounting for 60% of our business. Our Industrial Division covers many segments, mostly coatings, textiles, metal working, construction chemicals and agrochemicals, generating about 30% of our turnover. Our third business unit, Daltrix, is responsible for automotive and electrical segments and 10% of our revenues. D'Altomare has been growing at rates above 20% over the past five years. In fact, the growth in the distribution business is attracting the interest of foreign investors. The size of the territory and pulverization of customers make this country an excellent opportunity for the distribution business.

What are the particularities that a distribution company dealing exclusively with specialty chemicals has to adapt to and what can you tell us about the D'Altomare Quimica's portfolio?

D'Altomare has always been focused on the specialty chemicals market. That way we operate in a more stable environment. The more unique a product is, the better it is for our business; the initial investment is where we take the hardest hit, penetrating the market and educating it on the advantages of these new products. Once that is achieved, the uniqueness of our offering makes it worthwhile. Another important factor is the exclusive partnerships that we have with our suppliers. The essence of D'Altomare's business is to create a very strong link with our customers and principals. Distribution implies services and through our technical and marketing intelligence teams, we manage to capture and develop innovative trends and concepts as well, thus staying ahead of the curve. The distribution business has evolved, from traditional logistics providers to meeting the needs of suppliers and customers. D'Altomare has formulation and application labs and pursues market development opportunities for new products or new applications with existing products. Our suppliers benefit from our product development expertise without having to set up their own local structure. D'Altomare has a high degree of customization. Within our own core divisions, our market segmentation aims to have at least the same level of expertise as our customers, to be able to understand their needs and provide the best solutions for their success in the markets where they operate.

What kind of companies are you targeting when you are choosing your suppliers, how do you manage your product offering with them and are you looking at companies from other BRIC countries such as China and India?

Some of D'Altomare's main suppliers are BASF, Croda, and Dow Corning. We benefit from these collaborations with access to cutting edge technology, global trends and a very wide range of products. In the personal care sector alone, Brazil has over 2,500 companies and out of those, about 20 account for 75% of all purchases. D'Altomare has the ability to provide products and services to all ranges of customers. We are always looking to expand our portfolio and working with very innovative companies such as Croda, BASF, and Dow Corning, insuring that we always have new products in the pipeline. We are open to the opportunity of working with companies that can offer the same level of collaboration.

Chemical distribution in Brazil only accounts for 10% of the total distribution market share, while levels in the USA and Europe are closer to 20%. Is this a sign of the market's untapped potential and how is D'Altomare leveraging it?

The weight of chemical distribution out of total sales in the USA is roughly 30%, while in Europe that number is closer to 20%. In Brazil, chemical distribution accounts for 10% to 15% of the market. More and more companies are relying on distributors because we are specialized and more cost-effective. We believe that between the Principal and Distribution we should cover 100% of the market. This responsibility prompts an increased level of transparency and trust that must be achieved between both parties. The national chemical distribution market is undergoing consolidation, with more and more multinational companies from Western Europe and the USA coming to Brazil. D'Altomare offers high-quality services to all of Brazil from our headquarters in São Paulo and our facilities in Manaus. We are building in Jundiai to accommodate increased space needs stemming from our growth over the recent past. We are looking closely at expanding to the Northeast of Brazil, a region that is showing higher growth rates as middle class consumption expands.

What are the core competencies of D'Altomare Quimica and what is the vision for the role it will play in the chemical distribution market in Brazil over the next five to 10 years?

The added value that D'Altomare delivers comes from playing an active role in developing the Brazilian market, capturing trends and opportunities for growth. D'Altomare does not work solely with existing products. We also develop concepts, creating and implementing them in the market, offering high quality solutions and services, thus building equity and value for our customers and suppliers. We continually strive to offer value-added products and solutions to meet the market's current and future needs to be the suppliers of choice and generate customer loyalty. D'Altomare is currently ranked as the 11th largest distributor in Brazil (source: ICIS). Our recent growth rates attest to our success and we intend to maintain this performance in the years ahead. •

INTERVIEW WITH

Marco Antonio Quirino

PRESIDENT
UNIVAR BRASIL

Over the past few years Univar has begun to turn its attention to emerging markets in Latin America and has been involved in several acquisitions recently. Could you talk us through Univar's expansion plans for the region and bring us up to date on your current situation in Brazil?

Univar is a global chemical distributor with a very strong base in the USA, Canada, and Europe that is currently engaged in enlarging its global participation. This has led us to focus on expanding our operations in Latin America, starting in Brazil and Mexico. In Mexico in 2012 we acquired Quimicompuestos, a local distributor, and in Brazil we took over the family-run firm, Arinos, in late 2011. The integration process is now more or less complete and it has been a great success. We have managed to achieve our core goal of combining the international culture and innovation of Univar with the good business practices and strong local relationships cultivated by Arinos. Today we run a very lean operation, with 200 employees spread around our three main facilities in the country. At our headquarters in Osasco we have several warehouses, our main transport hub, and a production plant where we manufacture polyurethanes. In addition to this we have warehouses near to the port in Itajaí, Santa Catarina, from which we are able to service our clients in south Brazil, and in the northeast we maintain a tank farm and warehouse center in Recife. This geographical dispersion allows us to stay close to our clients, and to our suppliers, wherever they are based.

Have you taken over all of Arinos' existing clients and suppliers? What are the main qualities you look for in a supplier?

In Brazil we aim to eventually serve all the market segments covered by Univar worldwide. Some of these, such as cosmetics, paints and coatings, and polyurethanes, were already strong markets for Arinos, whereas others such as mining, oil and gas, and agrochemicals, which Univar has a long history with, are new to the company. To help with this integration we have a specialist new business development department that is investigating the optimum strategy to move into these sectors. Looking at suppliers, there was a significant overlap with Arinos' existing suppliers and Univar's worldwide partners, so we were able to seamlessly take over the existing contracts. As it stands today, around 60% of the products we work with are produced locally, with the remaining 40% being made up from imports. In looking for new suppliers, we must ensure that there are shared values between the companies, and that there is a desire to build a long-term relationship, as well as being able to provide quality products on time. If these conditions are met, and they do not come into conflict with our existing suppliers, then we can build a strong partnership.

Many players have commented on the recent trend towards greater consolidation in Brazil's chemical distribution industry. What do you believe the effects of this shift will be?

It is interesting to note the evolution that has occurred in Brazil's chemical distribution sector over the past few years. As more international companies have arrived on the scene, they have brought with them a culture of greater professionalism and more commitment to suppliers and clients alike. Previously, the majority of the distribution companies in Brazil were small family operations, and they were dealing with the international giants of the industry. Today there is more balance in the sector, which leads to better results in the long run. There has also been tighter regulatory control imposed by the government, which has produced a more level playing field for all parties involved, and has helped to stamp out the informality that affected some areas of the sector.

There are some in the industry who wish to impose even higher import taxes on chemical products coming into Brazil in order to make domestic producers more competitive. What do you believe would be the effects of such a measure?

Over 60% of Univar's products are produced domestically, so at first glance it might seem that such a tax hike could be beneficial to the company. However, in reality such a move would be a terrible mistake, and would prove to be extremely damaging to the industry in the long run. Whilst the aim of stimulating the national industry is certainly admirable, this is not the right way to achieve such a boost. On the contrary, as has been proved time and time again in various regimes in several countries, protectionism does not increase competitiveness. Such practices remove the incentives to innovate and to reduce costs, and the end result would be to render our domestic industry obsolete, and the country even more dependent on imported finished products. The reason that local producers feel the need to be protected is because of the prohibitively high costs of doing business, so logically what should be addressed is the cost itself. Rather than raising taxes once again, the government should be working to simplify and restructure the tax system to arrive at a fairer and more balanced model, and it should also be investing in vital infrastructure. The new Ports Law that was passed this year is a good example of the type of measure that the government should be taking. By opening up the nation's ports to private investment they will help the sector develop and become more competitive, and this will stimulate greater use of the ports, which will in turn have a knock-on effect on many other industries. •

INTERVIEW WITH

Jan Felix Krueder

GENERAL MANAGER
QUIMICA ANASTACIO

Could you provide us with an update on Quimica Anastacio's activities, main achievements and financial performance during the year 2012?

Last year was a good year for Quimica Anastacio, as we increased our sales to 414 million BRL, which translated to a USD 15% increase and BRL 30% increase over the year 2011. This was partially achieved through the introduction of new products in all our market segments (consumer care, food and industrial processes) at a rate of three new products per month. In addition to that, we also had consistent marketing work done and our presence in various international fairs further increased our visibility on the worldwide stage; we now do business with 37 countries. Our suppliers are scattered all over the world (Europe, Latin America, and the US) but the most important ones are probably from China, India and South East Asia, where we have founded trusting partnerships with companies such as Godrej and KLK.

Quimica Anastacio operates in a variety of markets in Brazil. What can you tell us about your company's portfolio structure, suppliers and customers?

At Quimica Anastacio, we have a diversified portfolio, which amounts to a total of roughly 500 products. Overall though, the breakdown of our business would be 40% personal care items, 40% industrial processes chemicals and 20% food products. This proportion has been constant over the last few years and we expect it to remain the same in the future. Our customers include global household names, such as Unilever, Avon, P&G, Kraft, or AkzoNobel as well as small local companies, but what is essential is that Quimica Anastacio treats all of them with the same care and respect, indifferent of their size and buying power.

Delivery time and distribution capacity were previously identified as Quimica Anastacio's competitive advantages. Does that still hold true and how do these facts help you leverage your already established market position?

Quimica Anastacio is stronger than ever in point of just-in-time delivery and distribution capacity as we are preparing to open two new distribution centers, one in the North East of Brazil and one in the Amazon, in Manaus. These developments, along with recent investments in product tracking technologies will help us improve our delivery time and refine our inventories so as to be prepared and flexible enough for our customers' needs; currently we ship the next day after the order is placed. Importing into Brazil takes a very long time and the process of nationalization of these products can last up to 60 days; that is why it is essential for Quimica Anastacio to have high inventory levels that are suited for the ever-changing demand of our clients. Our customer surveys have shown that Quimica Anastacio's initiatives to increase the quality of our service have proved to be effective, and our client satisfaction index went up last year from 8.0 to 8.7 (out of 10).

How does Quimica Anastacio choose its products and suppliers and what are your regional development plans?

Quimica Anastacio's product selection is influenced by our constant communication with our partners; multinational customers sometimes want specific products on the market while big suppliers occasionally want to promote a new brand; also, our presence in international fairs makes us more aware of what's out there and what has value and utility. Overall, the breakdown would be 60% customer demand and 40% supplier initiatives. Otherwise, we are not being very aggressive in attacking the market, we are supplying multinational companies in Brazil and then, along with our distribution partners, we also do logistics for the subsidiaries of these multinationals in other countries, such as Argentina, Chile, Bolivia, Colombia or Venezuela. We deal a lot with the paperwork related to importing in Brazil and that is a service that many of our customers want since they can't afford the risk of delays. In summary, our work is done either through local supplying (for Brazil) or through an indent basis, with commissions (for other Latin American Countries). In the end, the complexity of Brazilian licensing and regulations serves as an opportunity for us, since we have the knowledge to untangle it. This leads to a flexibility in serving both small and big companies, which constitutes one of Quimica Anastacio's most important advantages.

What are the main challenges that an importing company, such as Quimica Anastacio, confronts itself with in the Brazilian business environment?

New regulations regarding port concessions, for example, do not affect Quimica Anastacio too much as we release our imported products as soon as possible, nationalizing them immediately and bringing them into our inventory; it costs us more working capital but overall, it is for the best. However, the constant changes to the import regulations impact us and we need to always be ready to adapt to them. Another problematic factor is the protection that is given by the government to the local chemical industry. By protecting this one sector, the authorities are actually indirectly negatively affecting all the other local industries of our customers. Industries such as cosmetics and food products are vastly more significant, producing higher added value items for export and employing far more people than the chemical industry; in order to be more competitive, they need to adjust their prices, thus contributing to an increased inflation that ultimately affects the end consumer. Overall, the government's protection strategy ends up causing more harm than good; it is a controversial issue in Brazil.

What does the future hold in store for Quimica Anastacio's operations in Brazil and in the region and what is the mid and long-term vision that you have for the company?

Quimica Anastacio will continue to supply Brazil and the region with new products, such as high added value goods, or specialty chemicals that are not produced locally, at a rate of three new items per month. We will keep bringing in various commodities and raw materials that can be then processed locally. There are many different opportunities for us, as the chemical market holds tremendous potential in all our market segments, like food specialties, sweeteners, and sports nutrition for the Food Business Unit. Quimica Anastacio ranks among the top three distributors in the country and we plan to further increase our market share, continuing the concentration trend that we have recently seen in the distributing sector in Brazil. Our philosophy is simple: we here, at Quimica Anastacio, want to do our daily jobs in a competent and professional manner. This step-by-step approach, focused on our current tasks, and the present has guided us to an impressive growth over the last 10 years and we believe it will do so for the future as well. •

Global Business Reports
Industry Explorations

Chemical Distribution in Brazil

How to avoid getting caught offside by Brazil's economic slowdown

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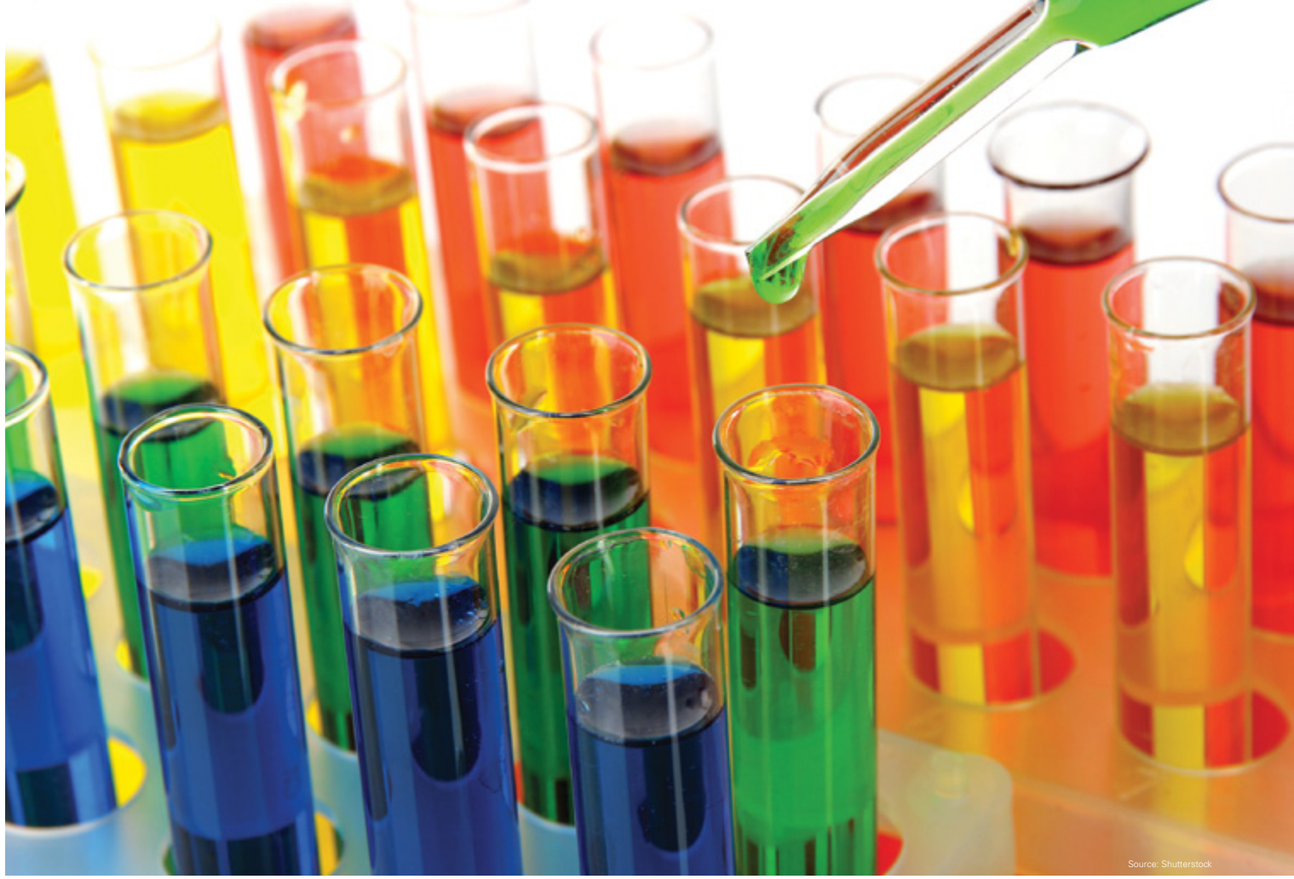

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In order to properly understand and assess the recent performances of the chemical distribution sector in Brazil, one needs to look at last year's overarching economic environment in the country first. The year 2012 will not be remembered as one with an exceptional financial performance for Brazil, which reported only a 0.9% GDP growth and an industrial sector contraction of 0.8%. Furthermore, this led to the South-American country placing last in terms of economic expansion in 2012 among its BRICS peers: Russia achieved a 3.4% GDP growth, India 5.0%, China 7.8%, and South Africa 2.5%.

With a total market of $181 billion, the chemical industry was the fourth largest contributor to Brazil's economy in 2012, after the mining, food and automotive industries and, while undoubtedly the industry remains strong, its market value decreased by $2.8 billion compared to 2011. It is also worth noting that the chemical industry's trade deficit amounted to a historical record of $29 billion during the past year. At first glance, these factors and trends do not set up the stage for discussing double-digit growth rates for any of the chemical industry's subsectors. Yet surprisingly, the chemical distribution market stands as proof of the contrary. Companies such as M.Cassab, Bandeirante Brazmo, Quimica Anastacio, Makeni, Gafor, D'Altomare Quimica and Dinaco all experienced sound economic performances in 2012, which varied from 10% to even 30% expansion rates during the year.

Overall, the chemical distribution sector in Brazil is still dominated by local family-owned businesses such as M.Cassab, Coremal and Quimica Anastacio, but multinational powerhouses such as Brenntag and Univar are constantly expanding footprints and market shares while Braskem-owned giant QuantiQ holds top position. The quality of services provided is in compliance with international standards, and a significant development in this sense was the establishment of the Reponsible Distribution Process (PRODIR) certification by The Brazilian National Distributor Association (ASSOCIQUIM) in 2003. PRODIR was elaborated in close partnership with the USA's National Association of Chemical Distributors (NACD) and the Canadian Association of Chemical Distributors (CACD) and this assured high exigency levels for environmental health, safety and security performances on the part of the Brazilian distributors.

One factor responsible for the success of the subsector in 2012 was related to Brazil's domestic production of specialty chemicals, which is still sub-par; a fact that partially explains the $29-billion trade deficit. This has led players in the distribution market to constantly invest in and shift their portfolio to specialty chemicals over the past decade and companies such as Makeni are targeting 50% of their offering to be focused in specialties by 2015. Other big names such as Bandeirante Brazmo, Quimica Anastacio and M. Cassab are following similar policies and while import taxes burden the final price to the consumer, the market has been willing to pay the extra price so far. Meanwhile, the companies that have had a specialty chemicals DNA from the beginning, such as D'Altomare Quimica, Dinaco, and Gafor are flourishing and do not show any signs of slowing down over the next few years.

The main advantages related to selling specialty chemicals have to do with the increased margins for the products themselves and their low price volatility.

However, the process of shifting portfolio focus has its challenges and this is the most evident with the big established players in the market. Specialty chemicals have a longer sale cycle than commodities and niche projects can last up to a year; they often involve companies reaching out to the final market and educating it regarding new products and new applications and this market penetration is often difficult to achieve. The result is a higher cost structure for the distributor, which needs to provide specialized training to its employees who need to approach the customers differently than they would with commodities. A good example of a different operating framework is provided by Dinaco, which does not pay its sales-people commissions, with the explicit purpose of not encouraging easy sales but rather difficult ones, which take time and effort to achieve. Gradually reducing the proportion of commodities in favor of specialty chemicals is a clear trend but proficiency in this respect will take longer to achieve for the big companies that are used to the commodity game.

Another element that has facilitated the good growth of chemical distributors in Brazil has been the gradual transformation of its chemical market according to global standards. Multinational and domestic chemical producers are outsourcing more and more of their distribution business to the specialized companies in the country and this development is largely related to the cost-effectiveness and efficiency that chemical distributors achieve in respect to their producing counterparts. The second global trend in action in Brazil relates to the overall chemical distribution proportion in the country's total market. In the more mature economies of the USA and Europe, chemicals account for roughly 20% to 30% of the total national distribution, while in Brazil that number is closer to 11%, a significant increase from six years ago, when it was only 6%. Due to their global nature and force, these two factors will undoubtedly continue to provide solid ground for the continued expansion of chemical distributors in Brazil.

Significantly driven from an economic perspective by its national consumption, Brazil has had several markets performing very well in 2012, with home and personal care (HPC) growing 6% and the automotive industry expanding 6.1%. The explanation behind the growth of these sectors is linked to the new Brazilian middle class, which has expanded considerably over the last 10 years: it is believed that somewhere around 30 to 40 million Brazilians have moved up from the D and E classes to the C class, which is designated as the new middle class. This term must be understood properly, as it does not have the same definition as its equivalents in Europe or the USA: according to the Brazilian government, the income of a C class citizen varies between 1,100 BRL ($500) and 4,500 BRL ($2,000). The majority of this social movement comes from the NE region of the country, which is still poor and where people are just starting to buy basic products for basic needs: food, cosmetics and even cars. These developments have led to distributors increasing their revenues based on the HPC and paints and coatings products, which have seen higher demand over the course of the last years.

Nonetheless, Brazil is not entirely a land of milk and honey for its chemical distributors. The poor level of infrastructure development and the tremendous distances between cities in Brazil (ranging to 4,000 km at times) directly impact distributors, who rely on road transportation and trucks for more than 90% of their business. Furthermore, a new truck drivers' law, commonly known as the "Resting Law", which came into play in February 2013, has raised freight costs 20% to 40% for the distributors; the law requires truck drivers to rest for 30 minutes after four hours of driving and additionally, a driver may be behind the wheel for only eight hours before he must rest for eleven hours. The complexity and the high level of the taxation system in Brazil is another issue that has proven to be problematic and recent changes in the ICMS tax structure (Tax on Circulation of Goods and Services) have triggered yet another period of coping and adjustment for the chemical distributors. Lastly, bureaucracies in the customs' clearance process and labor costs, which can represent up to more than 100% of an employee's wage, are also contributing to what is commonly known as the "Brazil Cost".

The expectations that existed four years ago related to the investments in infrastructure generated by the World Cup (2014) and Rio Olympics (2016) were not met and the complex taxation system continues to be a problem for doing business in Brazil at a general level. Although interest rates reached historically low levels in 2012, the cost of money is still high in the country and signs that this will be increased once again exist already. Furthermore, import taxes and the perspectives that the government will further raise them somewhat endanger the margins and the profitability of imported products. This being said, chemical distributors in Brazil will continue to benefit from the demand of high margin specialty chemicals, for which domestic production is very limited. National consumption levels will keep rising, as a direct result of the increasing prosperity of the new Brazilian middle class, development which drives key markets such as home and personal care, food and the automotive sector. Additionally, major chemical producers will continue to outsource more of their distribution and through their annex services such as solvent blending and testing, the distributors will gain more and more business. Overall, the fundamentals for growth are strong enough to outweigh the challenges and looking ahead, it's rather sunshine with a slim chance of rain than the opposite for the chemical distribution sector in Brazil. •

INTERVIEW WITH

Fernando Abrantes

CEO
M. CASSAB

M.CASSAB has a history of over 85 years in Brazil. What are M.CASSAB's main values and what is the philosophy behind the company that has allowed it to achieve this performance?

This year, we will be celebrating the 85th anniversary of M.CASSAB's activity. Initially a small business belonging to the entrepreneurial Cassab family, the organization is fully professionalized and has over 16 businesses nowadays, structured into three main divisions: distribution, consumption, and real-estate. The distribution division is the most important, accounting for roughly 75% of our group revenues (around $500 million), followed by the consumption division, that represents the other 25%, while the real-estate division is the owner of all M. CASSAB assets. More significantly however, we are now on a journey towards the year 2028, when our organization will be celebrating its centennial. To this end, we are focusing on a development program structured into three strategic stages, each five years long. Our mission is to prepare the company with a cohesive, strong and unified vision for this landmark date and we are fortunate to enjoy the full support and trust of our shareholders. The first step will be to double M.CASSAB's revenues by 2017 and we have already begun the construction of a new distribution center in Cajamar (Sao Paulo) to support this growth and to concentrate all of the group´s operations. More than anything else however, our people are our most important asset and we are relying on their creativity and innovative spirit to help M.CASSAB reach its final goal; we are investing in them because their input will be essential and we need to clarify and unite our paths with theirs if we are to succeed.

Can you present us with a more detailed explanation of the chemical business component of M.CASSAB?

The Distribution Business is structured in four divisions, each of them representing a strategic market segment: Industrial Chemicals, Animal Technology, Lifescience and Products. Industrial chemicals are our newest division and we plan on investing heavily in them. More generally speaking, we are trying to obtain a balance in our business and have equally important divisions across the organization, which means that the industrial chemicals division, as a whole, will go through major improvements and investments. However, the potential for all these business segments is tremendous and one good example is the food ingredients component. The world's population keeps growing and demand for food will increase accordingly; Brazil will play an essential part in supplying this need as it possesses both the land and the water necessary for this endeavor. In summary, our distribution business will greatly prosper in the next five years and it will see new products being introduced and new market segments being opened.

M.CASSAB is working with a wide array of suppliers but is it also adding value to the products?

The distributor is the marketing arm of the producer and thus, the quality of our relationship with our supplier is essential. We must be strategically aligned to their strategies and we are committed to the market as a team. The distributor reaches four times more clients than the producer and we bring new technologies on the market, allowing small customers to obtain technologies that they otherwise could not. M. CASSAB also provides working capital and, more generally speaking, solutions. When one understands both the customer and the producer like we do, finding the proper mix between the right products, the right place and the right time becomes easy; we are the link that smoothens and speed up the process. Thus, the importance of our trusting and reliable relationship with our partners cannot be overstated. At the end of the day, the greatest added value that we strive to implement is the ability to foresee the needs of our customers and consequently, stay ahead of the market.

What is the range of your distribution business and does M. CASSAB plan to expand internationally as well?

Our Consumption Division has international branches, such as the ones in the Miami, Dubai and China. From a distribution perspective, we have a subsidiary in Argentina that constitutes our main focus currently and will remain so for the next five years, as M.CASSAB will be consolidating its business there. Otherwise, there are several other interesting Latin American markets, such as Peru, Columbia and Chile, in which we might one day open offices in, as we have the expertise and the knowledge to do so. Ultimately, it is natural for us to work abroad with our already established multinational suppliers; it is easier for them as well since they know M. CASSAB and they understand and respect our business culture. By carefully planning our market approach and strategies, we can enter new markets successfully. In this sense, our sourcing office in Shanghai is a strategic part of our supply chain, identifying, selecting and qualifying suppliers and, at same time, being the seed of our project for focused sales operation on Asian markets.

What are the challenges that M.CASSAB encounters in the Brazilian chemicals market?

Since M.CASSAB deals with both local and imported products, the various levels of competitiveness among these can influence our performance. Other factors, such as the import tax in Brazil, also affect us but by properly aligning our strategy with that of our suppliers', M.CASSAB can manage to ultimately optimize its activities. The poor state of the infrastructure as well the high freight taxes also represent problems that stand in the way of the development of Brazil's chemical distribution sector and many others. •

INTERVIEW WITH

Silvio Fagundes

GENERAL DIRECTOR
GAFOR DISTRIBUTION

Can you give us an overview of Gafor's history and an outline of your business today?

The Gafor group is a family-run business that started out as a small, truck-based fuel transport company in 1951. Over the following decades we diversified into other sectors such as real estate, and in 2003 we started our distribution company. The most recent development came in 2009 when Gafor moved into industrial production, acquiring a paper mill in a joint venture with the Italian Fedrigoni group. Today, transportation still accounts for 60% of the group's total business and within this sector we are divided into two independently operating companies, one for logistics and the other for distribution. Gafor Distribution is still a relatively small company, with turnover in 2012 of 240 million BRL, of which $180 million BRL was generated in Brazil, but we are expanding far above the industry rate and last year we experienced growth of 30%.

Who are your main clients and in which regions do you operate?

Gafor operates mainly in Brazil, with approximately 70% of our business conducted here, and most of the remainder is in Argentina, but recently we have also begun exporting to Uruguay and Paraguay, although these two only make up about 5% of sales so far. We have three main clients who account for 85% of our total distribution: Exxon Mobil, Acción in Argentina, and Petrobras here in Brazil. The other 15% comes from much smaller domestic companies such as Elekeiroz plasticizers. At Gafor we believe that a close relationship is key to a successful partnership with producers, and we usually like to act as the sole distributors for the companies we work with in order to avoid becoming merely resellers of their products.

The lack of diversity in production makes distribution a very competitive area to work in. How does Gafor distinguish itself from the competition?

Gafor's main competitive edge comes from our exceptionally high standard of customer service. We offer fast delivery times, and guarantee next-day delivery to customers if they place an order before 15:00. All our sales team are experts in their field with degrees in chemical engineering, and they deal with all clients on a case-by-case basis, ensuring that we can provide exactly the right solution for them. We also offer performance related bonuses twice yearly to our staff as an incentive for them to take great care with their work. Establishing such a close relationship with our clients ensures that we can tailor our inventory levels to their individual needs, and means that we always maintain enough stock.

Many in the sector complain that the government does not offer enough support to industry. What measures should they take to improve working conditions?

First and foremost the infrastructure must be improved; there have been promises made for years to improve conditions of the roads and ports, but until now there has been very little action taken. There is also a desperate need for reform of the tax regime as the current system is suffocating businesses. Taxes that were introduced in an effort to make local producers more competitive have backfired, and now we are in a mess where often taxes on raw materials are higher than those for final products. Compounding the situation further, Big Chemical producers, is now lobbying for a hike of up to 35% in duties on imported chemicals in an attempt to decrease the reliance on imports, but as it stands there is not enough local production of basic materials to cater for the demand from manufacturers further down the supply chain, and such a measure would have disastrous consequences for distributors and consumers alike.

What are your thoughts on the prediction that we will see the distribution market becoming much more concentrated in the next few years?

There is a possibility for the market to become more concentrated in the future as the strong competitors become more firmly entrenched and smaller firms become absorbed by the big players, but we are not seeing it happen yet, and there is no real certainty that such a trend will appear. Gafor did consider taking over some smaller companies, but the problem is that they are often poorly managed, and the difficulties involved in integrating them into our system and ensuring that the necessary tax documents are prepared correctly means that the investment is not worthwhile. We have chose instead to follow a path of organic growth, moving into new areas as our customers' operations expand.

What does the future hold for Gafor?

The chemical industry looks set to continue to grow at a higher rate than the economy, and although we would like to see domestic production of chemicals increase in the future, for the moment we do not expect to see any decrease in the reliance on imports. Within the chemical distribution industry there is still a lot of room for expansion; at the moment chemicals only account for around 10% to 11% of total goods sold through distributors (not transported), whilst in the USA and Europe it is closer to 20%. At Gafor we hope to capitalize on this trend and our plan for 2013 is to grow by 35%. Going by the sales figures that we have for this quarter, we are already on track to hit this target. •

INTERVIEW WITH

Reinaldo Medrano

COMMERCIAL DIRECTOR
MAKENI CHEMICALS (NOW PART OF IMCD GROUP)

Makeni has a very rich history in Brazil, dating since 1981. Could you provide us with a brief overview of Makeni's main milestones during these years?

Makeni is a typical Brazilian family-owned business, and was founded in 1981. Its history comprises of two different stages: one from 1981 to 1990 and the other from 1990 to present times. During the first period, Makeni acted as an export agent in Brazil, dealing mainly with Brazilian petrochemical products, especially BTX products (Benzene, Toluene, Xylene); this was a time in which Makeni gained a lot of international exposure and expertise. By 1990, Brazil was opening up to the world, its domestic market was growing rapidly, and the country's exports were starting to diminish, due to high internal demand. That is when Makeni decided to make a strategic shift towards the import and distribution business, which was beginning to be sought after by a number of big international players wanting to gain access to the booming economy of the country. The organization kept its original role at a lesser scale, and it shifted its focus on the import and local distribution component, which today constitutes the backbone of Makeni. Currently, 65% of our business deals with industrial commodities such as paints, coatings and process chemicals while the other 35% is focused on food, consumer care, and pharmaceutical products.

Brazil's GDP growth in 2012 was 0.9%. Given this context, what was Makeni's economic performance last year?

The year 2012 was a frustrating year for all of Brazil, as the initial growth expectations of 4-5% were not achieved. Makeni performed differently however and we succeeded to boost our sales as well as our economic indicators in the end. Brazil's industries were in an overall vulnerable position when the crisis hit in 2008 and already, in 2009, Makeni had taken steps to strategically place itself in the market so as to avoid the effects of the economic slowdown. We started investing in specialty products, while maintaining our commodities portfolio. In 2009, we had a ratio of commodities to specialty products of 8:2, and by 2012, the proportion had changed to 6:4. Our target for the year 2015 is to have a balanced portfolio, of 50% commodities and 50% specialties.

Makeni's rich history has helped it establish itself as a reference in the Brazilian market for foreign partners. What are the other competitive advantages that set Makeni apart from its competitors?

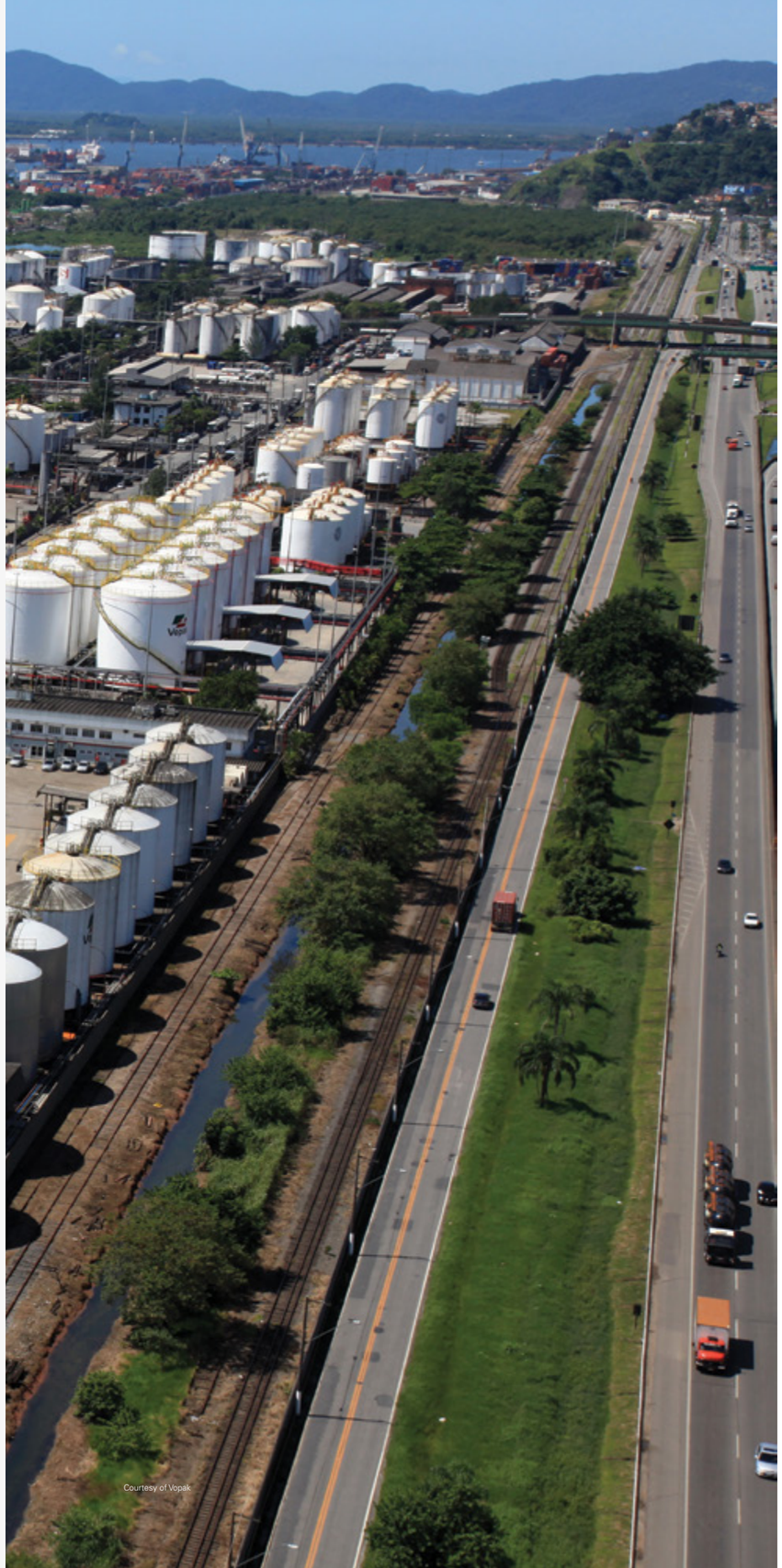
Makeni's main differentiator is represented by its pioneering spirit. We were among the first to look for foreign suppliers when Brazil opened up its borders, and we were among the first to get quality certifications such as Responsible Distribution Process (PRODIR), ISO 9001 and ISO 14001. Makeni maintains this forward thinking approach today by constantly looking to innovate, and to find new suppliers, solutions and practices that will ultimately help our clients. We are a Brazilian organization with tremendous international experience and we manage to create a very constructive synergy based on that. A service that I would like to highlight is the MISS (Makeni Intelligent Systems & Solutions), which is a unit that deals with creating tailor made solvent blends for our clients. Based on the original recipes, and under a confidentiality agreement, MISS provides cost-effective outsourcing capabilities for the blends that our customers usually produce exclusively in their plants; and this is especially useful when factories are already producing at 100% capacity.

How is your business affected by the growth of the Brazilian middle class, governmental social programs such as Minha Casa, Minha Vida and the future sporting events happening in Brazil?

Brazil is going through difficult economic times at the moment but we are well positioned to exit the crisis faster than European or Asian countries since we are more influenced by the USA's improving performance than they are. This year, we expect Brazil to have a 2% to 3% growth, notably driven by the services industry, and while internal demand will be increasing, local industries will not be able to keep up the pace. This is very good for Makeni, due to our strong focus on imports and products that cannot be found in Brazil. Minha Casa, Minha Vida was temporarily suspended but this year, the structural funds allocated for it will be released once again; the government needs to take advantage of the World Cup and the Olympics to incentivize the entry of external investments into the country because currently, foreign money is being used mostly for applications. Lastly, the rise of the our middle class implies more purchasing power on the part of the Brazilian end consumer who is increasingly asking for more sophisticated and higher added value food and consumer care products. Makeni's focus on imports and specialty products puts us in a very favorable position to be able to take full advantage of this growing trend in Brazil.

What does the future hold in store for Makeni in 2013, as well as in the next five to ten years?

The year 2013 will be a very good one for Makeni, with strong increases not only in sales, but in all our financial indicators, a trend which will be largely driven by our specialties segment. We are pursuing a sustainable growth policy and to that end, Makeni is trying to implement a unified corporate vision where HR training plays an important part. The future of the distribution sector in Brazil will be characterized by increased competition and higher quality standards, as more and more foreign suppliers will be entering the country. •



Courtesy of Vopak

Transportation and Storage

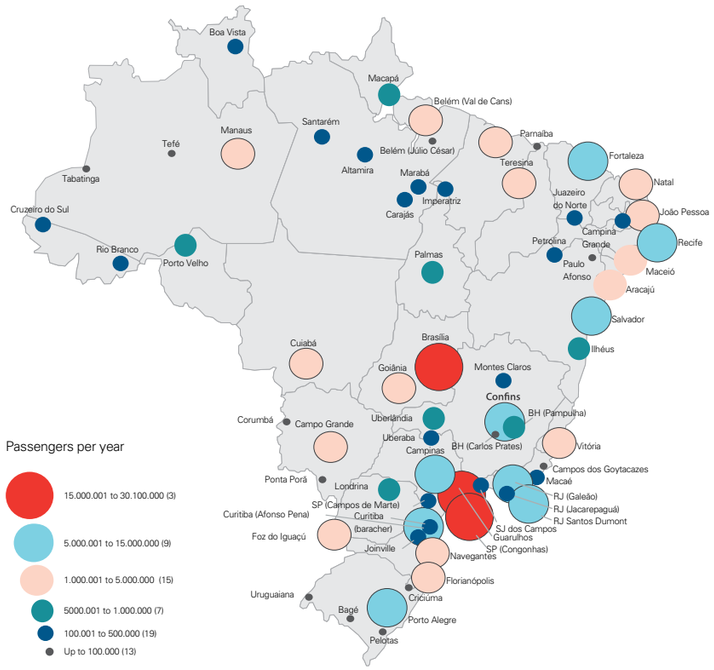
Transforming infrastructure underdevelopment into opportunity

To say infrastructure in Brazil is not optimal is to be diplomatic. Out of 28,000 km of railway, only 5,000 km is broad gauge railway: the majority of which is used by Vale, the Brazilian mining titan, for its iron ore transportation. Even though Brazil has 7,400 km of coastline, there are only several large scale industrial ports available, such as Santos (SP), Paranagua (Parana State), Rio Grande (Rio Grande do Sul), Aratu (Bahia), Itajai (Santa Caterina), and Manaus (Amazonas). These often experience bottlenecks and, earlier in 2013, a record 24 km long line of trucks was waiting to unload soybean cargo into 212 pending vessels in the port of Santos, a bottleneck which led China's largest soybean importer, Chenxi, to cancel orders of 2 million mt from Brazil.

Yet the infrastructure deficit is decreasing. In February 2013, in New York, Brazilian Finance Minister Guido Mantega lured investors with promises of returns of more than 10% for financing the $235 billion infrastructure project that the South-American government is working to implement: the plans are to build 10,000 km of railways, 7,500 km of highways, and 159 ports, amongst other

Major Brazilian Airports

Source: Civil Aviation Secretariat (SAC)



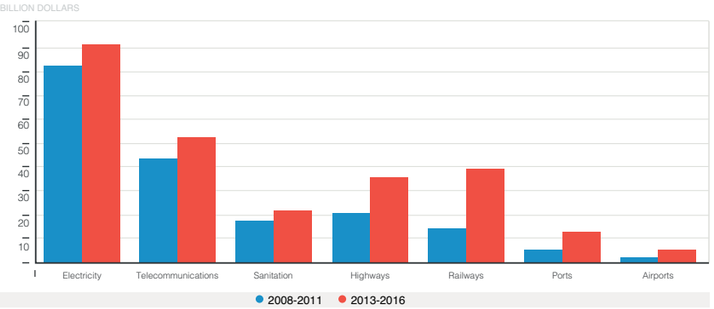
Brazil's Global Infrastructure Rankings

Source: World Economic Forum Global Competitiveness Report 2013-2014

CRITERIA	SCORE	RANKING (OUT OF 148)
Quality of overall infrastructure	3.4	114
Quality of roads	2.8	120
Quality of railroad infrastructure	1.8	103
Quality of port infrastructure	2.7	131
Quality of air transport infrastructure	3.3	123
Available airline seat km/week, millions	3,780.6	9
Quality of electricity supply	4.8	76

Agrochemicals: Cereal Yield

Source: World Bank

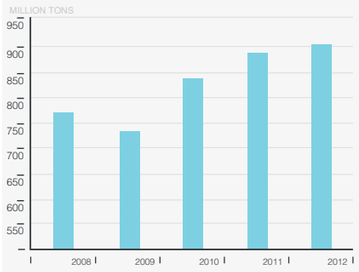


Airline Industry

Source: Civil Aviation Secretariat (SAC)

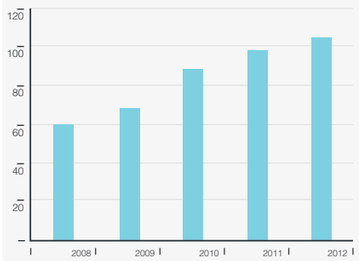
Total cargo handling in ports

Source: Civil Aviation Secretariat (SAC)



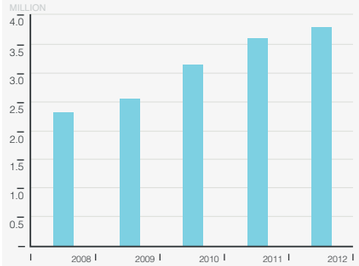
Thousand vehicles per km on highways

Source: Civil Aviation Secretariat (SAC)



New vehicles (buses, trucks, light commercial vehicles and cars)

Source: Civil Aviation Secretariat (SAC)



works. Though intermodal transportation, a practice often utilized in Europe and the US, is still not developed in Brazil due to the lack of infrastructural diversity companies such as BBC Chartering, Braid Logistics, Log-in Logistica and Maestra Logistica are increasing the offer of cabotage services. Law No. 12.815/13, which was enacted by President Dilma Roussef on the 5th of June, which had a record 646 amendments in Congress, allows private terminals to handle third party cargo, thus increasing port operator competition and boosting greenfield site investments.

Law No. 12.815/13 has been fairly well received by the industry, but with some reservations. "Vopak fully supports this initiative but the authorities need to find a solution that is equitable and fair; the new port concession law will give privileges to the winners of new concessions, privileges that are not available to companies that operate under the current laws," explains Daniel Lisak, managing director of Vopak Brazil, discussing the new law and its impact on his organization, which globally is the largest independent tank storage service provider by capacity. "Furthermore, under the existing code, payments for periods of 25 to 50 years were done upfront and these should be readjusted in a rightful way so as to not create disadvantages for the companies that have already made them. On the other hand, the potential of private ports, dealing with their own cargo, is a very interesting opportunity for Vopak and to that end we are already looking at the market, analyzing strategic positions for global movements in which we could place new terminals."

Infrastructure developments would also benefit heavy lifting and transportation companies such as Dutch multinational Mammoet, which has been in Brazil for over 10 years and which doubled its business in the country during 2012. Michel Booden, general manager of Mammoet Brazil, discusses his company's activity: "Last year brought many large new projects for Mammoet such as the ones in the Rio Grande and Rio Grande do Sul shipyards, where our new Mammoet in-house develop cranes, the PTC 200DS-s, operated. Thes are very big machines, at over 80 meters in height and 54 meters in the ring's diameter. Mammoet even set a new world record for the heaviest load lifted at the highest altitude on the P55 Petrobras Offshore Deck, which managed to take 17 tons of weight at an elevation of 47 meters. The Brazilian chemical market is not as large a proportion of our business as we would wish, and most of our current focus is offshore. The lack of adequate infrastructure makes it very hard for us to plan ahead, yet the line of business we are in requires us to do just that, as our solutions need careful analysis."

Underdeveloped and with the power to influence the economy's entire spectrum, infrastructure in Brazil could be deemed as the country's Achilles' heel. While investments in the sector will happen by force of nature, current challenges are serving as opportunities for the service-providers that can help companies untangle them. •

"Since M. CASSAB deals with both local and imported products, the various levels of competitiveness among these can influence our performance. Other factors, such as the import tax in Brazil, also affect us but by properly aligning our strategy with that of our suppliers', M. CASSAB can manage to ultimately optimize its activities. The poor state of the infrastructure as well the high freight taxes also represent problems that stand in the way of the development of Brazil's chemical distribution sector and many others."

- Fernando Abrantes, Diretor Superintendente, M.CASSAB

"It is encouraging to see the government now putting more emphasis on infrastructure, although its investments are still low relative to the requirements. Projects also take a long time to be built, so conditions in this region will remain difficult. For us it is a daily struggle to deal with the logistical challenges in Brazil: it is difficult to explain them to colleagues overseas. Hoyer uses service providers at the ports, but their poor state and changes to the regulations have an indirect effect on us through prices and inefficiencies. The biggest Brazilian port we operate in is Santos; the other main ones are Rio, Salvador and Paranagua. Hoyer carefully selects its service providers, especially for handling hazardous cargo. We check companies' certifications and whether their drivers have been trained in the use of the right equipment."

- Felix Bossmeyer, General Manager, Hoyer Brasil

"In the chemical industry, it is essential to clarify the range of products we are discussing; BYK deals with highly specialized fine chemicals, which are a very scarce locally produced resource in Brazil. Trade deficits that are based on commodities, which are plentiful in Brazil, are indeed a problem, as the local market could be successfully supplying them. However, in this high added value product range that BYK is involved in, and that constitutes no more than 5% of Brazil's entire chemical industry, there is very little local competition. Overall though, the biggest problem BYK faces locally is bureaucracy; the government has promised reforms and major changes, but very little has been implemented so far; also, infrastructural issues lead to bottlenecks that affect the entire supply chain and can put some companies out of business. Otherwise, an aspect that is both a challenge and an opportunity for BYK in Brazil is the high degree of sophistication and quality of the fine chemicals market, where the overall competitive landscape is very tough."

- Aurelio Rocha, Area Sales Manager, BYK

"Perstorp is very optimistic about the future. The additives market is recovering after a bumpy year in 2012, and we expect to see a lot of activity in important sectors such as the automotive industry, which is always a dynamic force for growth. We also believe that some of the long-promised infrastructure projects will finally come to fruition in 2013, driving up demand for our products and going someway to solving some of the logistical issues that plague Brazilian industry. Although it is too early to speak with any certainty, we feel that if Brazil continues down the path of rapid advancement that it is currently on, then in the next five years Perstorp could oversee the construction of a production plant here in the country."

- Claudio Gaino, Sales Vice President and Latin America Head, Perstorp

Global Business Reports
Industry Explorations
INTERVIEW

INTERVIEW WITH

Michel Booden

GENERAL MANAGER
MAMMOET

How would you characterize Mammoet's evolution and performance during the year 2012?

Last year Mammoet Brazil has executed several large and technically challenging projects. With these projects our rate of expansion in 2012 greatly surpassed the rates for 2010 and 2011. It was a good year, where we were able to put Mammoet Brazil further on the map. The 2 most eye catching projects where both executed in Rio Grande, RS. In one of the projects we deployed one of our new Mammoet in-house developed PTC 200DS cranes to do the integration of 2 FPSO's (Floating production storage and offloading): P58 and P63. We are talking about a very large containerized ring crane with a 200,000 mt/meter load moment. During the integrations we lifted modules up to 1,600 Te each onto the FPSO.

Mammoet Brasil also set a new world record for the heaviest load lifted at the highest altitude while lifting the P55 Petrobras Offshore Deck. The deck with a weight of 17,000 mt was lifted to an elevation of 47 meters. All this was done in a dry dock, and after the deck was erected, the dry dock was filled with water and the lower hull was brought into it and positioned underneath the erected deck. Finally we set the deck on top of the lower hull, a process called "mating".

We are also glad to announce that we were awarded a contract for the installation of the largest windmill park in Brazil. The magnitude of the project prompted us to create a new company, Mammoet Wind Brazil, which will be responsible for the installation of 230 windmills in Bahia, for Renova.

Right now, what is the relative importance of the chemical and mining sector for Mammoet's business?

Both the chemical and the mining market are on a worldwide level very important to Mammoet. These markets typically demand heavy and large equipment and therefore are a good fit for us. Apart from this, the mining projects are quite often in remote and difficult to access areas where special solutions are needed. This is where we can add value to our customers. We are currently bidding on several large mining and chemical projects here in Brazil. Here in Brazil often the end-clients are Vale or Petrobras, seeing how the Brazilian economy is largely driven by these entities. Numerically, it is hard to establish a ranking since the relative importance of the industry sectors to our business is given by the projects Mammoet is currently involved in; for example, with the Renova windmill project, energy will become an essential component whereas now it only represents a small fraction of our operations in Brazil. The duration of these projects is also relative, as it can range from a few months to several years.

How significant is Mammoet Brazil to Mammoet's global apparatus and reach?

Brazil constitutes a very important market for Mammoet mainly because there is still great growth potential. The foundations of the company were established here over 10 years ago. Now, we are looking to grow and to transform Mammoet Brazil into a regional office of significant importance to our worldwide operations. The local work force is an essential element for our business. Because of this we are spending a lot of time, energy and money to train local laborers; however, the highly specialized nature of our company prompts us to always have a certain percentage of highly-skilled foreign supervisors to oversee our operations. Overall, Mammoet's South American operations are evolving, with several projects in Chile, Peru, Venezuela, Ecuador, Colombia and of course, Brazil.

What are the main challenges that you encounter in the Brazilian business environment?

The largest challenges faced by Mammoet in Brazil are governmental bureaucracy, the lack of adequate infrastructure, and the general inconsistency in maintaining project schedules. On top of that, Brazil is a very expensive country to do business in, as taxes on equipment and labor are very high. These elements combined make it very hard for us to plan ahead; yet the line of business we are in requires us to do just that, as our complex, value-adding solutions need careful analysis. Another problem relates to the general mentality of Brazilian companies, which usually opt for the cheapest product or service in the market, omitting the long-term gains of engaging with a high quality solution provider; Mammoet is confronting this trend and it is up to our commercial and engineering people to get close enough to our clients, so we can show our clients the benefits of our solutions.

Mammoet is a project-driven business. How do these projects get selected and could you name some that stand out?

Given that the Brazilian market is so competitive, we do not have the luxury to pick and choose our projects; we fight for all the opportunities we consider of interest. At the end of the day, Mammoet is the largest heavy transport and heavy lifting company in the world and we are able to mobilize and deploy resources whenever that is necessary. One of the largest projects we are currently bidding on is Vale's S11D project. This is a perfect example of a highly complex project due to the type of work that needs to be executed as well as its remote location in the Amazon.

What is Mammoet's long-term vision for its operations here in Brazil?

At the moment, Mammoet Brazil's focus is to supply solutions and compete in the middle and top segment of the market, where clients understand the benefits of quality. We are looking for complex projects where we can provide full service, adding value for the client, and where we can put our superior technical expertise to work. We will continue to operate within this philosophy. Within the next few years we are aiming at becoming a fully mature organization. To that end, recently two new directors have been added to the company: one operational director and one financial director. •

INTERVIEW WITH

Daniel Lisak

MANAGING DIRECTOR
VOPAK BRAZIL

Could you provide us with a brief overview of Vopak, specifically with regards to your Brazilian operations?

Vopak is the world's largest independent tank storage service provider by capacity, specialized in the storing and the handling of oil products, liquid chemicals, gases, biofuels and vegetable oils. The company is headquartered in Rotterdam, the Netherlands, and we operate 84 terminals in 31 countries worldwide, having a total storage capacity that exceeds 30 million cbm. As an emerging economy, and given the size and the potential of its market, Brazil represents a very important country for Vopak globally, and the recent growths rates by capacity of approximately 15% here confirm this fact. Currently, we operate three terminals in Brazil and their total storage capacity combined amounts to roughly 310,000 cbm; also, we benefit from having almost 200 storage tanks in the country, of various types and sizes. The Alemoa Terminal that we have in the port of Santos is our biggest one, with more than 160,000 cbm capacity, followed by the Aratu Terminal in Bahia, with 90,000 cbm. Our third terminal, which is situated in the port of Paranagua, has a capacity of 60,000 cbm and it is managed as a joint venture with Ultra. This partnership has a high degree of independence and its own corporate governance; Vopak undertakes the operations and the technical parts while Ultra is responsible for the commercial and administration components. Both companies are very well aligned and understand the importance of the port of Paranagua for liquid chemicals in Brazil, reason for which we looking into further investing into the Terminal; however, this decision currently remains on hold as we await the adoption of new regulations for the port systems in Brazil. While in Paranagua the decision to increase capacity is on stand-by, Vopak's fully-owned Alemoa and Aratu terminals will surely be undergoing expansions: Aratu operations are scheduled to start in 2014 whereas the company intention for Alemoa is to begin the operations in the second semester of 2015. In order to increase visibility to stakeholders and to facilitate access to data regarding Vopak's operations in Brazil and worldwide as well, the company has recently launched an app for mobile devices that gives detailed information about our terminals around the world.

At a global level, Vopak specializes in dealing with oil products, liquid chemicals, gases, biofuels and vegetable oils, while providing an array of services to its clients. Which of these products and services are the most significant in Brazil for the company and how is Vopak affected by new market trends such as the increased importance of palm oils, ethanol and renewables, in general?

Vopak Brazil covers a wide array of products when it comes to storing and with the exception of heavy fuels, we can accommodate almost any kind of liquids: petrochemicals, chemicals, vegetable oils, oleo-chemicals, and biofuels. The handling and storage services that our company offers to clients include conditioned storage, the heating or cooling of products, weighing and nitrogen blanketing. In order to add even more value to our services, Vopak can also help its clients in import/export and distribution operations. From a quantitative perspective, petrochemical products remain the most important for Vopak in Brazil, followed by vegetable oils, for which we are a market leader in the country through the activities we have at our three terminals.

Palm oil production is a relatively new development in Brazil and the only current operations in the country are in Maranhao; that being said, the end products mainly serve the local market, with applications in the food industry. The largest demand for palm oils however comes from the Southeast and this has prompted increasing levels of imports from Malaysia during the last years; Vopak acknowledges this trend not only in Brazil but in the whole of South America and we are leveraging the situation to our advantage. Overall, we perceive a significant increase in the importance of cleaner and more environmentally friendly products for the chemical and petrochemical industry. Ethanol is seeing a revival in Brazil and companies are investing in new production plants for it but currently the majority of the product is being used locally as fuel. Nonetheless, Vopak is preparing itself for a future increase of ethanol international trade; countries like Mexico are looking into producing it in higher volumes and Vopak already has the experience of dealing with special types of ethanol designed for industries such as the pharmaceutical one. Green products and renewables surely represent a significant trend not only in Brazil but in all of South America as well and Vopak is aligning itself to be part of it. Lastly, the discovery of pre-salt reserves in Brazil along the southeast coast of the country also represents an interesting opportunity for Vopak, and we are looking into potentially expanding our business in that region, and leveraging this market in which we are already very strong globally.

A new regulatory framework for the administration of the ports systems in Brazil is currently in the works. Could you share some light over the expected impact that this will have?

The new law, although in its preliminary stages, brought a lot of uncertainty and complexity and may bring some deep impact to the Port sector. Generally speaking, the uncertainty that results from not knowing what new legislations will look like always triggers companies to be conservative and careful with their investment plans, and that can be seen across industries, another good example being the mining sector in Brazil. Vopak is trying to use its network to collaborate and communicate with other industry players and the authorities to share its view that this uncertainty is not productive and that a clear schedule and timeline should be announced. The overall aim of this new regulation is to improve the competitiveness levels of ports and to stimulate private investments in this type of infrastructure and Vopak fully supports this initiative. However, the authorities need to find a solution that is equitable and fair through which to achieve this; the new port concession law will give privileges to the winners of new concessions, privileges that are not available to companies that operate under the current laws. Furthermore, under the existing code, payments for periods of 25 to 50 years were done upfront and these should be readjusted in a rightful way so as to not create disadvantages for the companies that have already made them. On the other hand, the potential of private ports, dealing with their own cargo, is a very interesting opportunity for Vopak and to that end we are already looking at the market, analyzing strategic positions for global movements in which we could place new terminals. Vopak is a very strong company globally, and we are always prepared to invest as long as we see potential in a specific region or place.

What are the growth perspectives for Vopak's market in Brazil for the future and what is the mid and the long-term vision for the company's role and operations in the country and the region?

Even though Vopak is a relatively new entrant on the Brazilian market, our sustained efforts to develop our business here have led to us having a very good position in the country. The last two years have seen investments in expansions being done by our competitors, and with the market's recent slowdown, we will soon see increased competition given this new excess of supply. Nonetheless, Vopak is a global company that offers world-class services to its customers and we have been doing very well in Brazil recently where we signed a contract in Bahia with a specific customer and this arrangement will stretch over the period of 15 years. The company is heading towards the celebration of its 400th anniversary in 2016 and in preparation for that, Vopak Brazil and, more generally speaking, Vopak Americas is looking into growing in this region that is strategic for the global operations of the company. •

Final Thoughts:

Index, Company Guide, Travel and Credits

"The first years of the global financial crisis, 2008 until 2010, were actually very positive for the Brazilian economy in general, and for its plasticizer sector in particular. At the time, Brazil was experiencing 7% GDP growth per year and production levels for plasticizers peaked in 2008/2010. However, since then, developments have not been as positive; overall, production levels in our sector have ceased to grow and we are roughly at the same capacity as we were in 2008. Even so, I am optimistic about the future and confident that 2013 will be a good year for Petrom."

- Pedro Roquete, Commercial Director, PETROM

Source: Shutterstock

Global Business Reports
Industry Explorations

FINAL THOUGHTS

"GranBio's goal is to produce one billion liters of ethanol by 2020 and the current plant, BioFlex, which is in construction, has a capacity of 82 million liters so our operations will require many more plants to be built in the next seven years. The ethanol will be sold mainly in Brazil, but we do not exclude commercializing it in Europe and the US as well, where prices are more advantageous for us. Another component of our business is the biochemical one; ethanol brings profits but our end goal is to leverage this cellulosic ethanol production to show the world that the hydrolysis and the quality of the sugars associated with it are good enough for the biochemical industry as well. GranBio will be looking to produce chemicals that do not require first generation sugars, that Brazil has a deficit in, chemicals for which there are big consolidated markets in the world already ($3 billion to $4 billion)."

- Alan Hiltner, Executive Vice-President, GranBio

"A more diversified market would probably bring more favorable conditions in terms of driving down the cost of raw materials, but this is not going to happen anytime soon. On the other hand, the current system does have its advantages, such as its stability and high standards of organization, which simply do not exist in other countries. As Rhodia-Solvay shows, with its integrated polyamide production chain, Brazilian textile manufacturers do have the potential to create vertically integrated production operations in the country, from basic petrochemicals all the way to the fibers themselves. A far more serious setback for the industry is the poor quality of infrastructure and high taxation on transport, which drives the overall value of our products down. We would like to see Brazilian politics geared more towards the textile industry as it is in other countries such as China and Turkey, where they support the domestic industry and nurture it to grow into an export industry. We are working for changes in the tax regime for textiles manufacturers and more competitive conditions, which would bring our prices down and further increase consumer purchasing power thus benefiting the nation."

- Renato Boaventura, President,
Associação Brasileira de Produtores de Fibras Artificiais e Sintéticas (ABRAFAS)

"Gelita's global presence allows us to observe foreign innovative trends and choose the ones we believe will have a strong impact in Brazil and in the region. Brazilians are people that are very concerned with their aspect and health and the fact that the population is aging means that the demand for the personal care and the health and nutrition products will be increasing. The supplements and the sports nutrition markets will also be expanding, as more and more gyms are being opened all over the country. The hide raw material resources are plentiful in Brazil and this also gives us the edge in the religion-related markets, where pork consumption is not allowed. As for our future performance, Gelita expects to have a double-digit growth in the specialties segments of its business in the year 2013. Brazil and Latin America, as a whole, are regions of the world that have strong growth, with emerging economies that carry a lot of potential. Gelita plans to leverage this situation and we expect to further develop our business in the region over the next few years, consolidating our position as market leaders."

- Claudia Yamana, Vice-President Marketing and Sales - Americas, Gelita

"Currently, Dinaco only operates in Brazil. We consider that there is a lot of room for expansion here and that we have many opportunities to pursue domestically for now. In the midterm future, Dinaco might look towards operating in other South American countries, as our principals are asking us to accompany them in countries like Argentina and Chile. Brazil has seen a shift in demand towards the north and the northeast of the country in recent years and that is noticeable especially with the personal care sector, but that is largely related to the consumer market growing. The industrial production still remains strongest in the SE and we do not see this changing over the next few years. Dinaco currently has warehouses and offices in Rio de Janeiro and Sao Paulo and these are covering the market very well for our needs. We keep up to three months on inventory because we want to give our customers the best level of service we can and seeing how Dinaco deals with specialties that are imported from all over the world, we cannot solely depend on ships arriving on time and on customs getting cleared very fast."

- Alexandre Kaplan, President, Dinaco Especialidades Quimicas

"In terms of petrochemicals, the prices are usually based upon the international environment and not solely on the Brazilian market. In fact, this is true almost for all raw materials that we use with the exception of natural gas. The price of the natural gas was driven down significantly due to the shell explosion in the U.S. and made it difficult for us to compete in products that are derived from natural gas. Unigel, together with the Chemical Association, has been working with the Brazilian government in order to find a solution to this problem and be able to work with natural gas at international prices. One of our strongest arguments is the fact that the natural gas as a raw material for the chemical industry is only about 5% of the use and we hope that the government takes measures that would benefit the entire industry in this relation."

- Henri Armand Slezynger, President and CEO, Unigel

"2012 was a very disappointing year for the country, with so little growth and inflation above 6%. The Brazilian government is working on improving conditions for consumers, taking taxes off end products, but by doing this it is ignoring the basic principle of investment in industry. Moreover, every company in Brazil is obliged to increase its payroll alongside inflation. I am concerned about the future of industry in Brazil, and am skeptical about the government's predictions on the future growth of the overall economy… [Nonetheless] the World Cup and Olympics will push up the overall economy. There will be more jobs in construction and therefore higher consumption. The foundry industry will benefit from increased demand for construction equipment, but not from the buildings themselves: structures are increasingly using light materials. This year will be much better than last for ASK Chemicals. We are working hard to improve efficiencies, and the overall foundry business is resuming. We feel our capacities and capabilities in Brazil are in very good shape, so there is no prospect of further joint ventures or acquisitions here in the near future."

- Luiz Augusto Totti, General Manager, ASK Chemicals South America

"The distribution business is structured in four divisions, each of them representing a strategic market segment: Industrial Chemicals, Animal Technology, Lifescience and Products. Industrial chemicals are our newest division and we plan on investing heavily in them. More generally speaking, we are trying to obtain a balance in our business and have equally important divisions across the organization, which means that the industrial chemicals division, as a whole, will go through major improvements and investments. However, the potential for all these business segments is tremendous and one good example is the food ingredients component. The world's population keeps growing and demand for food will increase accordingly; Brazil will play an essential part in supplying this need, as it possesses both the land and the water necessary for this endeavor. In summary, our distribution business will greatly prosper in the next five years and it will see new products being introduced and new market segments being opened."

- Fernando Abrantes, Diretor Superintendente, M.CASSAB

"I am just as impressed with the growth that is taking place in southern Brazil as I am with what is happening in the northeast. There is certainly great potential in the northeast, with many projects coming online, but there are also more issues there. The German Chamber of Trade is very active here, and the German-Brazilian relationship is growing increasingly strong which has helped support our business. On the one -ear horizon we will continue to do what we are doing, focusing on our ongoing investments and continuing to prepare the company for the future. A lot of projects are being talked about for 2013, but it is always unclear when exactly they will materialize; our goal is to stay in the game and continue to maintain ongoing relationships with clients. I predict that Brazil will continue to struggle in the short-term, but in the mid- to long-term I am very optimistic about the country's development. That being said, a number of structural changes are occurring that need to be managed from a political point of view. For example, three years ago, 70% of steel production was for export and today this is only 30%. These structural changes will be managed eventually, but it will take some time."

- Magnus Karlson, General Manager, Linde Gases

Industry Explorations

Sao Paulo Travel at a Glance


Source: Shutterstock

Exchange Rates

Currency: Brazilian Real (BRL)
1 BRL = 0.44 USD
1 BRL = 0.33 EUR
1 BRL = 0.27 GBP
1 BRL = 0.47 AUD
1 BRL = 2.69 CNY

Dialing Codes and Useful Numbers

Brazil Country Code: +55
São Paulo Area Code: 11

Police: 190
Ambulance: 192
Fire Department: 193

Travel in Sao Paulo

Although São Paulo may not be endowed with the kind of breath-taking natural beauty that one associates with Rio or Salvador, the city can provide many rewards to visitors who are prepared to scratch beneath the sometimes gritty surface. Paulistas, as the locals are known, are fiercely proud of their hometown and are quick to draw attention to the city's status as the country's cultural and commercial capital.

For travellers with limited time, the best way to get a feel for the city is to take a stroll through the upmarket neighbourhood of Jardins. The streets around Rua Oscar Freire offer many opportunities to indulge in some high-end retail therapy, as well as a plethora of boutique cafes where you can sample a cup of Brazil's most famous export.

Alternatively, on a sunny day, a good option is to amble around the city's most extensive area of green space, Parque Ibirapuera. In addition to the several kilometres of tree-lined paths, the park complex comprises several museums, an open-air auditorium and a scattering of sculptures designed by Brazilian master architect Oscar Niemeyer.

Thanks to successive waves of immigration throughout the 19th and 20th centuries, São Paulo is one of the most cosmopolitan cities in South America, and this is reflected in the varied local cuisine. Head to Rua Avanhandava for a whole street of Italian restaurants where the smell of fresh antipasti mingles with the soft tones of live jazz to create an aura of relaxed sophistication.

Looking for something with a more eastern flavour? São Paulo is home to the largest Japanese community outside of Japan, so it comes as no surprise that restaurants offering sushi and sashimi are a ubiquitous presence on the city's streets. The pick of the crop is Aizomê in Jardim Paulista where chef Koike prepares a constantly changing menu of Asian-themed dishes that are cleverly adapted to make the most of locally-grown Latin ingredients.

For those in search of a more traditionally Brazilian experience you could do far worse than Fogo do Chão. Now an international chain with branches throughout the USA this churrasqueira serves up some of the finest quality meats in the metropolis. They operate a rodízio system so sit back and the waiters will bring round the freshly grilled meat and carve it at your table.

Be warned though, Brazilians like to eat late, so if you decide to head out before 10:00 you may be in for a long wait.

If you are lucky enough to find yourself with a full weekend to spare then we suggest you make like a Paulista and head for the beach. The resort town of Guarujá is only 90 minutes away by car and boasts a range of accommodation that runs the gamut from luxury hotels to self-catering beachside cabins. From Guarujá the more intrepid traveller should follow the coast road north to the island of Ilha Bela, one of the top destinations in Brazil for sailing, diving and hiking.

However, we must issue a final note of caution. On national holidays we strongly advise that you avoid travelling by road: the southbound traffic jams caused by up to 5 million city dwellers simultaneously heading off in search of some sun are the stuff of legend.

Climate

	Average high °C	Average low °C	Record high °C	Record low °C	Precipitation mm
JAN	27.4	18.7	34.2	10.2	240
FEB	28	18.8	34.6	11.2	250
MAR	27.3	18.2	33.6	10.9	160
APR	25.1	16.3	31.3	6	80
MAY	23	13.9	29.8	5.2	70
JUN	21.7	12.3	28.9	0.9	60
JUL	21.8	11.7	29.3	0.2	40
AGO	23.3	12.8	33	-2.2	30
SEP	23.9	13.9	37.4	2.1	70
OCT	24.7	15.3	34.4	4.2	130
NOV	25.9	16.5	35.2	6.9	140
DEC	26.3	17.8	35.7	7.3	190

Global Business Reports
Industry Explorations

A Place to Stay

Though São Paulo may have moved away from its traditional industrial image over the past decade, it remains an important business hub and its surrounding environs an important center for the country's chemical industry. The city's hospitality sector, therefore, has learnt to cater to the needs of the international business traveller. **Hermes Beznoz**, director of **HB Hotels**, explains the dynamics of the sector.

Could you give us an overview of the hotels that you have within the HB Group?

HB Hotels has two main branches: one in Jardins, at the heart of São Paulo, and the other is located in Alphaville, a developing suburb that is home to a wealth of major companies and industrial facilities. We also have another small pousada in Porto Seguro, Bahía. Though the hotels cater to different profiles of guests, they are all run with a very specific focus on quality of service. At our Jardins hotel most of our guests during the week are businessmen and women who often stay for just a few days to attend meetings or an event, whilst at the weekend we see a lot of custom from families and tourists who want to experience all the cultural activities that São Paulo has to offer. In Alphaville, there is an even stronger focus on business clients, and our guests usually stay during the working week and leave for daytrips to other destinations during the weekend. They typically stay for longer periods than our other guests, and to cater to this all our apartments are much larger and offer the type of facilities that you would expect to find in your own home, such as a fully functional kitchen.

What are the main channels through which guests find HB Hotels? How have you seen the rise of the online booking sites?

As well as our dedicated reservations center, we have arrangements with several travel agents and a number of local businesses that use our facilities to accommodate corporate visitors. The sector has certainly changed dramatically with the arrival of online channels, as guests now have much more power to compare different hotels and be more selective. So, whilst the online channels are an important component of the business, which must always be taken into consideration, they are not the sole source of new customers.

How do you believe the forthcoming mega-events will affect the Brazilian hospitality sector? Is enough being done to stimulate investment in the sector?

I strongly believe that although events such as the World Cup and the Olympic Games may prove to be beneficial to the country in the long run, the short-term impact they will have has been grossly overstated. One of the immediate benefits is the generation of employment opportunity, even if for temporary jobs, for young people. It will for sure have effects in international tourism, as many of our wonderful destinations will be seen under the limelight. Many commentators are speaking of the increased need for accommodation that host cities will see, but realistically these events only last for a month each, and common sense dictates that building new hotels for a month of operation is foolish. A more intelligent solution would be to stimulate the improvement of existing accommodations, such as hostels, bed-and-breakfast accommodation in private homes, or even contract several cruise ships, which could serve as temporary hotels throughout the period of temporarily increased demand, and then leave when they are no longer needed.

What does HB Hotels offer that distinguishes it from the competition?

Any hotel can offer the basic facilities of four walls, a bed and a shower, so the real difference is to be found in the way that we treat our guests. It is important for our staff to know each guest by name, and to be aware of their individual needs such as how many pillows they sleep with at night, and which paper they like to read in the morning. Our aim is for guests to feel like they are staying in an extension of their own homes, and thanks to this personal approach we enjoy a high rate of return custom, with some guests who have been coming back for 12 years. It is not uncommon for long-term clients to call us from their homes just to talk and catch up!

What trajectory would you like to see HB Hotels follow over the next five years?

At HB Hotels we want to grow, but not so rapidly as to compromise our commitment to high quality. We must work hard to incorporate all new technical innovations as and when they are released. This is of course a constant investment, and not one that comes cheap, but it is absolutely necessary to ensure that guests feel comfortable. To give you an example, when the first flat-screen televisions came out, they offered essentially the same viewing experience as an old-fashioned CRT screen, but the projection of quality and modernity that they delivered had an enormous effect on how guests perceived their rooms. Similarly, we are in a constant process of renovation and modification of decorative details in order to keep up with changing tastes. Today we are changing all the light fittings in the rooms to LEDs because they are more modern and our guests prefer them. Obviously some aspects of the hotel's style must remain constant, particularly the façade and the architectural details, but inside it is a constantly changing product. To be pair with the international tendencies in hotel technologies and keep our quality of services, constant investment must be made. Better credit lines would significantly help the entire hotel business. •

Global Business Reports
Industry Explorations

SAO PAULO

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Hotel Fasano Sao Paulo
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www.fasano.com.br

Hotel Unique
Avenida Brigadeiro Luis Antonio, N0 4700
Jardim Paulista, Sao Paulo, State of Sao Paulo 01402-002, Brazil
Tel: + 55 11 3055 4700
www.hotelunique.com

L'Hotel Porto Bay Sao Paulo
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www.portobay.com

InterContinental Sao Paulo
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Hilton Morumbi Sao Paulo
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www3.hilton.com

Emiliano Hotel
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www.emiliano.com.br

Hotel Transamerica Sao Paulo
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Tel: +55 11 5693 4050
www.transamerica.com.br

George V Casa Branca
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georgev.com.br

Renaissance Sao Paulo Hotel
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www.marriott.com

Pullman Sao Paulo Ibirapuera
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www.pullmanhotels.com

Hotel Grand Mercure Sao Paulo Ibirapuera
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www.accor hotels.com

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Sao Paulo, State of Sao Paulo 01402-002 , Brazil
Tel: +55 11 3665 8200
www.melia.com

Clarion Hotel Faria Lima
Rua Jeronimo Da Veiga, 248
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www.clarionhotel.com

Caesar Business Sao Paulo Paulista
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www.accorhotels.com

Pergamon Hotel
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Consolacao, Sao Paulo, State of Sao Paulo 1307000, Brazil
Tel: +55 11 3123 2021
www.pergamon.com.br

Hotel Novotel Sao Paulo Jaragua Convention
Rua Martins Fontes, 71
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Tel: +55 11 2802 7000
www.accorhotels.com

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www.tryphotels.com

Hotel Quality Bela Cintra
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quality-bela-cintra.hotelsone.com

Mercure Apartments Sao Paulo Nortel
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Tel: +55 11 2972 8111
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Sheraton Sao Paulo WTC Hotel
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www.sheratonsaopaulowtc.com.br

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www.melia.com

Global Business Reports
Industry Explorations
INDEX & COMPANY GUIDE

COMPANY NAME	WEBSITE	PAGE
Government, Associations and Organizations		
Associação Brasileira da Indústria Química (ABIQUIM)	www.abiquim.org.br	13, 16, 18, 41, 45, 98
Associação Brasileira de Produtores de Fibras Artificiais e Sintéticas (ABRAFAS)	www.abrafas.org.br	25, 90, 98
Associação Brasileira dos Fabricantes de Tintas (ABRAFATI)	www.abrafati.com.br	25, 36, 38, 42, 98
Associação Nacional para Difusão de Adubos (ANDA)	www.anda.org.br	
Assossiação da Insdustria Farmacêutica de Pesquisa (Interfarma)	www.interfarma.org.br	
Instituto Brasileiro de Petróleo, Gás e Biocombustíveis (IBP)	www.ibp.org.br	
Ministry for Development, Industry and Foreign Trade	www.mdic.gov.br	10, 98
Ministry of Health	portalsaude.saude.gov.br	98
Chemical Manufacturers (Petrochemicals, Specialty Chemicals, etc)		
Air Liquide	www.br.airliquide.com	61, 62, 64
Air Products	www.airproducts.com.br	61, 62, 65
AkzoNobel	www.akzonobel.com	36, 37, 38, 40, 59, 74
Amonex	www.amonex.com.br	
Amyris	www.amyris.com	28, 29
Anjo	www.anjo.com.br	
Arkema Coatex	www.arkema-americas.com	36, 42, 70
ASK Chemicals	www.ask-chemicals.com	90
Baerlocher	baerlocher.com.br	16, 21, 25, 36
BASF	www.basf.com.br	34, 36, 41, 42, 72
Birla Carbon	www.birlacarbon.com	43, 45
Buckman	www.buckman.com	
BYK	www.byk.com	37, 70, 82
Canexus	www.canexus.ca	59
Grupo Centroflora	www.centroflora.com.br	
Chemtura	www.chemtura.com.br	
Construlev	www.construlev.com.br	
Cytek	www.cytec.com	
Dinaco Especialidades Quimica	www.dinaco-sa.com.br	68, 76, 90
Dow Corning	www.dowcorning.com	8, 12, 50, 54, 55, 72
Dynatech Quimica	www.dynatechbr.com	
Eastman	www.eastman.com.br	44, 48, 70
Elekeiroz	www.elekeiroz.com.br	17, 20, 22, 23
Evonik	www.evonik.com	51, 56, 57
Fersol	www.fersol.com.br	
Fortymil	www.fortymil.com.br	
Gelita	www.gelita.com	50, 90
Granbio	graalbio.com	28, 30, 31, 32, 33, 90
HB Fuller	www.hbfuller.com	44
Henkel	www.henkel.com.br	44, 49
Industria Brasileira de Gases (IBG)	www.ibg.com.br	61
Itatex	www.itatex.com.br	
Kluber	www.klueber.com	
LignoTech	www.lignotech.com	
Linde Gases	www.aga.com.br	61, 62, 63, 90
Lord Corporation	www.lordla.com.br	44, 47
Momentive	www.momentive.com	
Morais de Castro Produtos Quimicos	www.moraisdecastro.com.br	
Orica	www.orica.com	
Oxiteno	www.oxiteno.com	17, 25, 26, 37
Peróxidos do Brasil	www.peroxidos.com.br	59, 60, 63
Perstorp	www.perstorp.com	50, 82
Petrom	petrom.net.br	18, 24, 25, 88
Purcom	www.purcom.com.br	
Puro Lite	www.purolite.com.br	
Radici Group	www.radicigroup.com	44
Shire	www.shire.com	
Solazyme	solazyme.com	28, 32, 33
Taminco	www.taminco.com	50, 58
Tate & Lyle	www.tateandlyle.com	
Transcor	www.transcor.com.br	36
UNIGEL	www.unigel.com.br	14, 16, 90
Wacker Quimica Brazil	www.wacker.com	
Distribution, Transportations and Logistics		
Bandeirante Brazmo	www.bbquimica.com.br	68, 69, 70, 76
BBC Chartering	www.bbc-chartering.com	82
BDP	www.bdpinternational.com	
Braid Logistics	www.braidco.com	82
Coremal	www.coremal.com.br	66, 68, 76
Daltomare Quimica	daltomare.com.br	
Gafor	www.gafor.com.br	68, 76, 79
Golden Cargo	www.grupoarex.com.br	
Helm	www.helmag.com	
Hoyer	www.hoyer-global.com	82
ITW Chemical Products	www.itwchemical.com.br	51, 52
Katoen Natie	www.katoennatie.com	
M Cassab	www.mcassab.com.br	68, 71, 76, 78, 82, 90
Maestra Logistica	www.maestralogistica.com	82
Makeni	www.makeni.com.br	68, 76, 80
Mammoet	www.mammoet.com	82, 94, 95
Pochteca	www.grupopochteca.com.br	
Quimica Anastacio	www.quimicaanastacio.com.br	68, 69, 72, 75, 76
Rentank	www.rentank.com.br	
Sul Atlantica	sulatlantica.com.br	69
Univar	www.univar.com	68, 71, 73
Vetta Química	www.vettaquimica.com.br	12
Vopak	www.vopak.com	82, 96, 97
Engineering, Testing and Legal		
Honeywell	honeywell.com	
MANN+HUMMEL	www.fluidbrasil.com.br	
Pinheiro Neto	www.pinheironeto.com.br	
SGS	www.br.sgs.com	
Skanska	www.skanska.com	
Zeppelin Systems	jmbz.com.br	

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