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Brazil's Chemical Industry: A bump in the road to growth

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INTRODUCTION

Internationalized and increasingly mature, Brazil's Chemical Industry did not escape the effects of Brazil's economic slowdown

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.

Nonetheless, with its 190 million people forming one of the most appealing domestic markets in the world, the South-American country is far from throwing the towel in the ring. 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 BRL 1,100 (\$500) and BRL 4,500 (\$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 sector nonetheless remained the country's fourth largest contributor to the economy in 2012, with sales of \$153 billion.

BASIC AND INTERMEDIATE PETROCHEMICALS

In the shadow of US's shale gas boom

The developments surrounding the shale gas boom in the US have made investors cautious about spending big money in the national petrochemical industry of Brazil, a country in which high raw material prices still represent the main problem and where the last cracking facility was built in 1982. Natural gas prices in Brazil oscil-

late around \$10 per Million Metric British Thermal Unit (MMBTU), as opposed to \$3.79 in the US. 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 which are derived from natural gas. Unigel, together with the Chemical Associa-

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tion, 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 produc-

tion 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 have a total investment value of \$4.5 billion and is run together with Grupo Idesa as a joint ven-



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ture called Braskem Idesa (65% of Etileno XXI is owned by Braskem and 35% by Idesa). Meanwhile, Oxiten, 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 Nitrocarbonyl, Propet 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 Politen, Petroquímica Triunfo, Quattor and the polypropylene business of American Sunoco Chemicals.

FEEDSTOCK

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 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



Elekeiroz's chemical intermediates facility in Camacari

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 fulfil its commitment to double production in the next 5 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 Piauí, 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.”

GREENER

Sustainable solutions represent a growing trend in Brazil, and Braskem is leading the way, already running a 200,000 mt/y green polyethylene (PE) plant. Another company that is focusing its attention on green products is Petroquímica Mogi das Cruzes (Petrom), which works in collaboration with universities such as UNI-

CAMP. 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



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Oxiteno in action, 40 years after the creation of the company

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 Dinocetyl Phthalate (DOP), are beginning to be restricted within the European Union and the United 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.”

While the industry arguably lacks investment in R&D, there are exceptions to the rule and a perfect example of that 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 R&D, 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.”



Joao Parolin, CEO, Oxiteno

PAINTS AND COATINGS

Brazil’s Paints and Coatings industry, the fifth largest in the world, worth \$ 4.3 billion in sales in 2012, did not perform as well as expected in 2012, but developments in the civil construction, infrastructure and automotive industries should allow it to grow well in the future. 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. Now, we are more optimistic about the future because the main sectors reliant on paints will grow significantly. 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 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."

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



Juarez Costa, President, Baerlocher Brazil

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

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Baerlocher - Founded in 1823 in Germany
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US and EU. The end consumer is primarily 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. 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'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 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."

SPECIALTY CHEMICALS

The Automotive Industry – A Driver for Carbon Black, Engineering Plastics, Adhesives and Sealants

Brazil's automotive industry, the fourth largest national vehicle market in the world, saw a 6.1% growth during 2012, and car makers from the four corners of the world are expanding their presence in the country, where presently there are only approximately 250 cars per 1,000 inhabitants. 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



Birla Carbon operations at its Camacari Plant

(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



Ronaldo Silva Duarte, President South America, Birla Carbon

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 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 Radici-Plastics 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 which 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



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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."

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.

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



ITW Chemical Brazil HQ in Embu das Artes

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 (4000 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 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.



Marcelo Pupo Nogueira, general director, ITW Chemical Brazil

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 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 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



Evonik laboratory in Brazil

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.

BIOTECHNOLOGY

Ethanol 2G and Bio-chemicals: cracking Brazil’s lack of specialty chemicals in an organic way

Brazil leads sugarcane production and ranks second (behind the US) in terms of ethanol output on a global scale. Given this context, the fact that the country’s pro-ethanol policies date back to the mid-1970s does not surprise. 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. 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 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 (\$ 3-4 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 BRL 300 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 BRL 600 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 Vertex. We acquired numerous germplasm 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 Paulo. The factory, with a planned production capacity of 300,000 mt/y of oil by 2016, was awarded BRL 245 million by 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. 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 BRL 22 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 because 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: speciality chemicals used in cosmetics, food products and oleochemicals. In trying to help its national ethanol industry, Brazil might have done itself a bigger favor than initially though: gaining competitiveness in the weakest link of its chemical industry.

What was once discarded, GranBio will transform into ethanol.

By applying technology and innovation, GranBio is transforming the cycle of the cane fields of the state of Alagoas, in the Brazilian Northeast. Pressed cane, which was once burned or left in the field, is now the raw material for producing second-generation ethanol.

In São Miguel dos Campos, Alagoas, GranBio is investing R\$350 million in the first plant for second-generation ethanol in the Southern Hemisphere.

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PULP AND PAPER

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 (7 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 chlor-alkali 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 five to seven percent 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 doesn't cost 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.

INDUSTRIAL GASES

Safety in numbers 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 Brazil-

ian 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 sta-



Magnus Karlson, General Manager, Linde Gases

tions to fulfill new requirements. Brazil copied a lot from the FDA, and these new 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 five percent 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 ArcelorMittal, 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 logis-

tics 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.



Linde continued its expansion in 2013 in Paraná



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CHEMICAL DISTRIBUTION

Despite a rather stalled environment, the chemical distribution market saw companies experiencing sound economic performances in 2012. The sector contains multinational powerhouses such as Brenntag and Univar that are constantly expanding footprints and market shares while top position is 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 however 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 PRODIR certification (Responsible Distribution Process) by ASSOCIQUIM (The Brazilian National Distributor Association) in 2003. PRODIR was elaborated in close partnership with the USA's NACD (National Association of Chemical Distributors) and the CACD (The Canadian Association of Chemical Distributors) 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



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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 globalization 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.



Endvar Rossi, Director of Life Sciences, D'Altomare Química

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 south-east 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 before-mentioned markets was also noticed by Joao Miguel Chamma, CEO of Bandeirante Brazmo, one of top 5 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 trans-


portation 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 ICMS tax (Tax on Circulation of Goods and Services), 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, are also contributing 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 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 (USD) being worth 2.04 Brazilian Reals (BRL) and by March, the rate had gone down to 1.94. However, since then, we have 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 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 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 con-



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sumption 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 towards 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 partners, 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.

LOGISTICS, TRANSPORTATION AND STORAGE

Transforming infrastructural underdevelopment into opportunity

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 works. Infrastructure in Brazil is undoubtedly not optimal at the moment; there are only 5,000 km of broad gauge railway in the country out of 28,000 km total, the majority of which is used by the Vale, the Brazilian mining titan, for its iron ore transportation. Furthermore, 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 Catarina), and Manaus (Amazonas). However, 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 two million mt from Brazil. Furthermore, due to lack of infrastructural diversity, intermodal transportation, a practice often utilized in Europe and the US, is still not developed in Brazil but companies such as BBC Chartering, Braid Logistics, Log-in Logistica and Maestra Logistica are increasing the offer of cabotage services.

The year 2013 has seen however the evolution of a major breakthrough in Brazil's port system. Law No. 12.815/13, which was enacted by President Dilma Rouseff 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

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and boosting greenfield site investments. Vopak is the world's largest independent tank storage service provider by capacity, and Daniel Lisak, managing director of Vopak Brazil, talks about the new law and its impact on his organization: "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. 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



Daniel Lisak, Managing Director, Vopak Brazil

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 developed cranes, the PTC 200DS-s, operated. These



Mammoet established a new world record in Brazil in 2012

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



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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.

CONCLUSION

Too big to fail

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 shale gas reserves are there to stay and sooner or later, their exploitation will occur; and as the world’s population keeps growing, it will require more food that Brazil is naturally posi-



Angelo Bianchini Regional President Latin America – Dow Corning

tioned to offer through its enormous agricultural potential. 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. Arguably, considering the international attention it is attracting, and its political stability, size, resources and culture, Brazil could not stop growing even if it wanted to.

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