There is an old Brazilian saying that states: “Brazil is the country of the future…and it always will be”.

In fact, for the Brazilian automotive industry the “future” seemed very close during the mid ’90’s. The economy was consolidating its stabilization process and re-opening to world markets, vehicle domestic sales reached a record of 1.9 million vehicles in 1997, and a wave of investments driven from 1st tiers and vehicle manufacturers leveraged the vehicle installed capacity from 1.4 million vehicles in 1994 to the current 3.5 million units. In other words, expectations were skyrocketing.

However, few countries like Brazil have the same ability to defy market predictions and from 1995 to 2001, a big cycle of international crisis slowed down considerably the development of most emerging markets. Not surprisingly, the general macro economic fundamentals were not all in place; dependence on external capital was still very high and the local Central bank had much less currency reserves to protect the Brazilian economy against international fluctuations.

As a result when everyone was expecting a vehicle domestic sales boom, which would take the Brazilian market to where it should be, sales dropped to 1.2 million vehicles in 1999.

Therefore, it was quite a discrete party when the Brazilian automotive industry celebrated its 50th anniversary in 2006; but half a century is always a time for reflection and instead of walking through a middle age crisis, the industry avoided the after party hangover and celebrated performing extremely well.

Indeed it took a while; but after years of expectation Brazil’s automotive market has staged its comeback into the world automotive spotlight reaching the historical mark of 2.46 million vehicles sold last year. Nobody could predict a 27.8% market increase, but the signs, inflation control and a decrease of interest rates, were there.

Ironically, while the world was watching a credit squeeze, through the subprime real estate crisis, the major agent of change in Brazil’s automotive market also goes by the name of credit. “In fact, it is an excellent moment for us; credit lines are pushing the domestic market to historical figures and the Brazilian macroeconomic conditions combined with the growth of the purchasing power, showcase very good prospects on the short term” says Paulo Cardamone, Director of CSM Auto Latin America.

For the cynics, the Brazilian economy of 2008 is in a much better
“Quality recognized by the main automotive companies”

www.proema.com
shape than in 1998 and given Brazil’s central role in commodity and agricultural sales, local purchasing power and credit conditions are bound to improve. Furthermore, confidence in the Brazilian economic policy should drive the country to receive an investment grade status at any time now. As a result, in an impressive jump, Brazil is expected to become the world’s 5th largest automotive market this year.

### World Automotive Market Ranking

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Source: CSM Auto Latin America

With around 19,000 employees worldwide, the Behr Group is one of the leading suppliers of automotive air conditioning and engine cooling equipment. Behr Brazil plays a key role in the Behr Group production network: as a successful company operating in a fast-growing market; as a supplier for other Behr locations; and as a manufacturer of auto spare parts. Made by Behr.
Nevertheless, the time for a new investment cycle has arrived. But for those who learned the lesson the hard way, it is inevitable to draw some parallels between now and nearly ten years ago. How is the Brazilian automotive industry to convince investors sitting in Detroit, Tokyo and Paris that the current sales boom is more than management hype and different from the last one? Whether 2007 is the beginning of the “future” or not is yet to be seen. But it is certainly a year not to forget.

The long road to 5 million vehicles Installed capacity, is there room for one more?

Fortunately, the expansion of credit and the historical sales were not the only reasons to celebrate in 2007. Last May, the local automotive industry reached the landmark of 50 million vehicles produced since 1956, quite an achievement for a country like Brazil. Nevertheless, in the words of Jackson Schneider, President of Anfavea, the Brazilian vehicle producer association, “the industry needs to produce the next 50 million vehicles in even less than 15 years in order to be competitive.”
The current volumes start justifying local manufacturing of products that were once not attractive. As an example Bosch has decided to bring its ABS production to Brazil. “Bosch received the last order to complete the 250 thousand ABS units to be produced by October 2008, therefore one year and a half after the launch the factory will already work in full capacity” says Edgar Garbade, a Brazilian leading the local operation which comes back to his homeland after 26 years. “Local manufacturing of Air bags could be the next product to be manufactured locally”, he adds. The sector needs it to fight the ghost of rising imports; automotive items imported from China grew 57.6% in the first semester of 2007.

Traditional market leaders such as Behr have taken the lead on conducting the necessary investments, according to the CEO for the Brazilian operations Max Davis Forte. “In Behr’s investment plan towards Brazil we have followed a 10 to 15 million US dollar investment every year. The target for the investments was not only capacity, but also development,” he says. In fact, the company experienced gradually higher levels of complexity within its local operations.

“It started as support for the commercial vehicles, extended to engine cooling and passenger vehicles, moved into air conditioning and finally became a world supplier base for the Behr group” Davis Forte explains. At the same time, Behr Brazil is playing a great role in the group’s production network; “we know how to explore regional advantages, it is a major strength of the company,” he concludes.
In the same way, Luis Pasquotto, Market Senior Director for Engine Business Unit, points out: “Specifically talking about the Engine Business, the Cummins factory in Brazil (Guarulhos) has pushed forward a plan of US$ 115 million dollars investment from 2005 to 2009, therefore the message to our suppliers was very clear: Invest to be prepared in capacity and quality. I believe that the high demand of 2007 is sustainable, it is not a bubble.” That is an important message at a time when engine supply is becoming critical to companies such as GM and Fiat in the country.

Not to mention that this success is spread among his Brazilian partners. “The Brazilian automotive supplier base is very traditional and has an edge particularly in terms of forging, foundry and casting. Therefore Brazilian based companies such as Krupp, Tupy and Teksid have managed to achieve distinguished positions among the Cummins worldwide supplier base,” he adds. A current visit of 24 Directors of the Cummins leadership team, headed by CEO Tim Solso, has highlighted the commitment to Brazil.

Another engine related company investing in the country is the Mecaplast Group. According to Marcelo Calache, Managing Director for Brazil, “the company aims to double its capacity in the country by 2012.” Established as a commercial operation in 1998 following its main customers PSA Citroen and Renault to the country, the company has quickly moved to production, adapted to local conditions and is spreading towards other vehicle producers taking advantage of the market momentum. “Mecaplast Group in Brazil will not lose business because of lack of available capacity, the Group considers an additional facility in the Mercosur region (Argentina, Uruguay or, Paraguay),” completes Mr. Calache which still has 20% of available capacity.

The very well established 1st tier do have the structure to invest in the country, however all eyes are turned into the ability of their national partners to follow the required investment levels. One of the executives who identified that space for financially strong national companies was Leandro Mantovani. His company Keko which, produces tubular accessories, was founded in the back of a garage twenty years ago, and until the year 2000 it was only focused on the aftermarket. The need for new players and the aftermarket competition in the field of tubular accessories drove the company to also seek vehicle producers. “As the company works with lower scales the units directed to vehicle manufacturers have very special attention”, he says.

As a result, three years ago Keko invested in a plastic manufacturing facility, and in collaboration with Ford they co-developed the Fiesta Trail. Currently the company is investing in a plant to integrate all of its divisions. Mantovani’s particular goal is to double the company’s turnover over the next 5 years.

Paranoa is another national company with muscles to invest. “Since 2001 the company multiplied its sales by five, and we will continue to increase strongly at much more than the market rate. We are investing a lot every year, about US$ 6 M in new technology or new capacity. Nowadays, we are a
Brazilian Car of the Year
AutoEsporte Magazine Brazil

Brazilian Truck of the Year
Autodata Magazine Brazil

Fiat Group is one of the major industrial groups in Brazil. With net revenues of US$14 billion in 2007 and 32,000 employees, Fiat Group is not only a big player in the industry, but also a preferred supplier of quality products and services to its large portfolio of local customers.

In 2007, Fiat Auto was the Brazilian market leader for the sixth year in a row. CNH tops the list for harvesting and construction equipment companies. Iveco is the fastest growing truck manufacturer in the country. Teksid is the second largest iron foundry in Brazil. Magneti Marelli is the leading supplier for multi-fuel injection systems. FPT ranks among the biggest petrol and diesel engine manufacturers. And Comau is a major player in the industrial automated systems market.

Fiat Group. An Italian industrial group with a Brazilian heart.
very verticalized company, we are working two shifts, and next year we are investing another US$ 6 M to increase sales by 20%,” emphasizes Luiz Gustavo Mwosa, President - CEO of the rubber component company.

Luiz Gustavo Kass Mwosa.

If you are an engineer, raise your hand. The current market and industrial growth is so impressive, that recruitment is getting harder. In some specific sectors it is really difficult to answer to the market demand. As an example, VW had to re-hire 375 former employees and Fiat hired 3,000 workers only in the first semester of 2007.

“The solution is to hire experienced professionals in contact with younger professionals. This will have a multiplicative effect and speed up the process of educating the newcomers,” says Vilmar Fistarol, President of the Brazilian Branch of the Society of Automotive Engineers and Purchasing Manager of Fiat Group in Brazil. The automotive industry has to incentive newcomers at the very bottom of the education system, from high school, creating technical courses for youngsters and fostering a culture of technology.

As substantial automotive development work is driven to the country, the Brazilian educators take advantage of other success stories to sell the vehicle industry as a dream career. “It’s all a matter of people understanding career perspectives. Let me draw a parallel. Think of Embraer. Embraer, a few years ago started an innovative culture, all of a sudden they needed engineers, and there weren’t enough, because nobody had foreseen Embraer’s growth and attractiveness. The moment people see there is going to be an industry that is going to grow and give a career opportunity I think you will have the ability to retain a lot more people in engineering than today,” says Leticia Costa, President of Booz Allen in Brazil.

Donizete Santos, President of SKF Brazil and a former Human Resources director has found an effective and alternative way to make employment attractive: “Our system is 2 x 12 (2 shifts of 12 hours per day or 24 hours a day). It is another significant factor for our competitiveness. We all know that infrastructure and traffic in Sao Paulo are chaotic; therefore the workers really appreciate the system.” This model of work shift enjoys full approval from employees and their Union, and has placed SKF as a reference for the market.” In recent years we have been growing at the rate of 20% per year approximately, for SKF, Brazil is a place of high volume and high quality, we had only three complaints over the entire last year,” concludes Santos which is the first Brazilian to lead a SKF operation in the country since 1915. The Cajamar plant was among the Best in the Automotive Division in the SKF Group in 2007.

One important question would be how to speed up the process of involving engineers within development activities. “There are about 13,000 engineers engaged in the Brazilian automotive industry, however, it takes an average of eight years to mature an engineer in Brazil, to be competitive we need to reach half of this time. There are success stories such as GM/Poltelctica, Ford/Unicamp, Fiat/PUC Minas and UFSC,” says Luc de Ferran, a legend in the industry and the creative mind behind the Eco Sport platform.

Brazil’s local development Have it your way

Brazil is suffering a cost crisis. I believe Brazil is no longer competitive in terms of its cost structure; a Brazilian engineer makes an average of US$ 48,000, an Indian engineer costs 26% less than that, a Chinese one 24% less. Moreover, in the way the currency is behaving the only way to make up for that is quality, speed and engineering competence,” explains Luc de Ferran. However, the well established 3rd generation of Brazilian automotive engineers is remarkable when compared to other countries, particularly in terms of engines, new fuels (ethanol, biodiesel), foundries and engineering of compact cars.

Vehicle producers certainly decided to take advantage of that. Ford has established Brazil as one of its five worldwide engineering centers and nearly doubled its engineering team since 2002. Fiat invested US$ 200 M in 2003 to enhance the activities of its development center and General Motors has delivered the local operations global responsibilities for the medium pickup size S10.

Vilmar Fistarol.

Most of the leading international first tiers such as Bosch, Magneti Marelli, TMD Friction, Arvin Meritor have also established important world development centers taking advantage of the local technical expertise. Vehicle producers invested in local engineering and we really know how to build a car, the supply chain is very strong, international companies such as Delphi, Bosch, and Behr are all run by local engineers”, says Vilmar Fistarol, President of the Brazilian Branch of the Society of Automotive Engineers and Purchasing Manager of Fiat Group in Brazil. As a result newcomers to the Brazilian market such as Mecaplast Group are also beginning to consider the region as a development hub; “I believe that next year the local operations could be transformed into a development center,” says Marcelo Calache.

Although Brazil has produced cars since the 1950s, its development flagship program was developed in the 1970’s. At that time, the oil crisis drove the Brazilian government to introduce gasoline blended with a high volume of ethanol in order to incentive the development of straight ethanol fueled vehicles. The choice of ethanol was quite simple, Brazil since 1930 has been the biggest ethanol producer in the world. Later on, as gasoline prices decreased and subsidies were withdrawn, the sales of new ethanol fueled vehicles became drastically reduced.
BRAZILIAN BORN.

AETHRA takes the leadership on the Design of the latest generation fuel tanks, manufactured with steel plates covered with organic-metallic coatings, with fully resistance against multi-fuel corrosive actions.

The newest fuel tank was developed with Brazilian technology and it is already being assembled on vehicles that are currently exported to Europe and South America. This fuel tank Design has also a pre-arrangement technical capability to attend the North American Emissions Standards such as “LEVII” and “PZEV”.

New Aethra Ecological Multi-Fuel Tank
Making a contribution to the Environment
However, in the beginning of 2003, through some special electronic sensors, the flex fuel technology was introduced in the Brazilian market. In practical terms, the Flex Fuel allows the choice of fuel between gasoline and ethanol at each vehicle refueling; in nearly 4 years its market share went from zero in 2003 to 86% in December 2007.

Anyone who thought Brazil’s major breakthrough would sell like water in international markets has been proved utterly wrong. From a commercial standpoint, there is not a commodity base established for ethanol and due to domestic demand, the litre is already slightly expensive. On top of that, although Brazil accounts for 85% of the world production, it cannot guarantee the world supply by itself. From a political standpoint many countries need to embrace ethanol in their energy policies. What’s more, the social implications of producing ethanol, such as possible worker exploitation and low wages are additional negative ingredients.

In spite of that, Brazil is throwing all its weight into developing alternative fuels. The National Biodiesel Program and the law 11.097 set a target of 2% mixture with diesel fuels by January 2008 and 5% by 2013. The new adventure is already an example for several nations such as Chile. It could leverage Brazil exactly to where it wants to be: a technology exporter.

Therefore the biggest challenge for the Brazilian Industry is not technical, as the results are there, but political; the country fails when it comes to delivering the same conditions which competing countries for automotive investments enjoy.

It is critical to create a better business environment but difficult with the tax burden reaching levels of 36.4%, in cars powered up to 2000 cc. Certainly not ideal for a country which aims to be competitive at world standards. On the positive side, Brazilian Engineering, born with the stigma of lack of resources, has already showcased its ability to design global platforms, showing that flexibility is a must.

**Follow the leader**

Every vehicle producer in the world is looking at Brazil right now. However, nobody seems to believe more in the country than Italian manufacturer Fiat. To begin with, its arrival in the 1970s changed the geography of the local automotive industry. The Group was the first to invest in the automotive potential outside of the State of Sao Paulo, and today its plant took the State of Minas Gerais to account for 21.7% of the entire vehicle production of the country in 2006. Furthermore, the investments opened the eyes of other companies to set up factories in Rio de Janeiro, Parana and other regions.

A Great deal of this success relies on the leadership of Cledorvino Belini, President of Fiat Group for Latin America. In his former position, as head of Fiat’s Purchasing Department, Belini was the mentor of the so-called “minerization”, a supplier development program which capacitated and attracted several suppliers to the region of Minas Gerais leveraging Fiat’s nationalization index and helping the company to consolidate its pole position in the domestic market.

“Fiat had only 9% of market share and only four vehicle manufacturers were in the country, all concentrated in Sao Paulo. The industry did not really believe in Fiat, but still we convinced Denso, Sumitomo, Valeo and important international suppliers that the future was Minas Gerais and conse-
quently the Tempra, Uno and other models drove the company in a very short time to reach a 25% of market share,” he says.

A very well respected figure within the local automotive community, Belini’s next target is to produce 1 million vehicles from Latin America. Already, Fiat do Brasil is the biggest Fiat operation outside of Italy; it accounts for nearly 30% of Fiat’s entire vehicle production. The industrial site of Betim produced nearly 700,000 vehicles in 2007. At that speed, capacity is certainly an important issue. However, a recent visit from the company’s worldwide CEO Sergio Marchionne has granted Latin America with an outstanding figure of 3 USD billion of investment, which could drive Betim to become the biggest automotive plant in the world.

Fiat did not do it all by itself; By developing its local supplier base in the country Fiat has been the driver of many Brazilian success stories which range from 1st tiers to service providers. No other vehicle producer in the country has had that level of success in terms of capacitating national partners.

One of the most shining examples of such marriage is Proema. The company has integrated so well into Fiat’s production system that it was awarded the Global Fiat Qualitas. Currently collaborating with nearly all vehicle producers in the country, Proema seems well established to take advantage of its positioning in different directions; market growth, trend for low cost development in Brazil and internationalization of local projects.

“The company’s natural trend is to internationalize its operations. During the year of 2008 the first partnerships with international automotive companies will be concluded, and we will be physically present in a South American country,” says Paulo Paparoni, the company’s president. In regards to his development activities, he says, “Proema has a very active benchmarking department; its role is to identify world trends and to serve as bank of suggestions for development activities. On top of that, there is a department of advanced engineering, dedicated exclusively to research, study and prototypes of new products, alongside with the improvement of the current ones.” According to him, all the development done by Proema is conducted by Brazilian engineers: “Our Turin office works a support base to the application of the product and benchmark.”
Another beneficiary of the supplier development approach of Fiat was Metalurgica Mardel, a company producing axle brackets, suspension front support, stamped pieces, welded and painted units and many others.

“As a national company, we are learning a lot with our collaboration with the big vehicle producers, as we enhance our relationship with companies such as VW and Fiat, we understand that these players have a great commitment to the country, the Brazilian industry and a great respect towards Brazilian suppliers,” states Francisco Marins Palacio, the company’s President.

The Group is currently divided among its three companies: Mardel, dedicates its activities to stamping, Revest Hedel works with painting lines and Prostamp, tool shop and development. Celebrating its 40th anniversary in 2008, the company seems to be growing like never before. “As several of our competitors stayed along the way, we inherited these contracts little by little. Mardel owns a lot to the vehicle producers which believed in our work,” he explains.

From the services standpoint, Tegma is another national company, ahead of its international peers. Having recently conducted a successful IPO, the company has improved its business model.

“Another key operation for the Fiat Group is Teksid. In the country since 1976, the company has evolved to become the second biggest iron foundry in the country and over the last five years it has doubled its installed capacity in Brazil to 300 thousand tons, reaching the position of the biggest unit of the Teksid group worldwide. The Fiat success is also spread to Magneti Marelli, one of the flex fuel pioneers in the country, to Comau, a leader in industrial automation, to Fiat Powertrain, one of the biggest petrol and diesel engine manufacturers, and to tractor producer Case New Holland.”

Swimming against the current, why are smaller Brazilian companies going Global?

In February, the local currency hit historical evaluation reaching 1.6 to every USD. Therefore, exports of Brazilian vehicles decreased 6% in the year of 2007 in comparison to last year and the auto component industry achieved a foreign trade deficit of US$ 84.2 million in 2007.

The more the Brazilian economy sends credible signs to the market, the less are the chances to see a weaker “Real”. It is true that export decrease percentages are compensated by the opportunities generated on the domestic market, however, several players are placing profitability aside and thinking about exports on the long term, while other companies are looking into exports as a hedge against imports. In any case the industry seeks for niche value added areas.

“If in 2007 15% of our sales were originated from exports; our key markets were the most developed ones, as we sell high value added products,” says Livaldo dos Santos, CEO of Industrias Romi a company involved in machine tools, plastic injection molding machines and machined cast iron parts. In the same way, Leandro Mantovani, Keko’s CEO, points out, “Keko is very innovative which allows us to reposition our prices in the international market, if nobody has a product, we can charge for its value.”

As Marcelo Calache, Managing Director of Mecaplast would say, “Brazil took an interesting turn, now we are importing raw materials and exporting added value automotive
“Initially the focus was not the automotive sector, but to develop a “Rudolph maturity”. However, as Slovakia is such, Rudolph has taken advantage and managed to consolidate import contracts with the German General Motors, and on top of that we are also in very advanced negotiations with Bosch in Germany,” says the company’s President Wolfgang Rudolph. And he adds: “the cost of capital in that region is cheaper if compared to other developed countries of the European Union. According to the executive, the possibility allows the company to get in touch with the newest technologies and “most importantly to develop a future for our employee.”

Paranoa a leading rubber component producer in Brazil is no different. The reason behind setting up assembly operations in Argentina, “is to avoid competitors and to grow, as well as give a local face to our Argentinean market, because as an already impressive 500,000 unit market continues to grow, the signs show us that it is very important to give clients better support and service,” says Luiz Gustavo Mwosa, the company’s President - CEO.

But he is aiming much higher, as exports account for 15% of sales, he pursues a figure of 35%. In order to achieve that, the company has established a sales office in the United States and is considering building up a plant in North America in the near future. “If you look at our company, we have a very strong Kaizen policy, and as we are very verticalized, more than any competitor in the US, we are very strong and competitive in cost. The world sees Paranoa as a cost threat,” he says. Established in countries such as Germany, Spain, Turkey, Venezuela, Mexico, the Brazilian operations even export to China and India.

But Paranoa is not the only local company looking into the huge North American market. Edson Campos, Managing Director of Indebras, is closely watching which direction the US will take with respect to flex fuel technologies.

“They have some cars running, but the infrastructure is very poor. They have problems, but my understanding is that they will move to this technology. And when they move, we will have our technology to offer,” he forecasts. With its own in-house development, the company aims to showcase a new sensor technology for the flex fuel car.

“North Americans agree that Brazilians have very good experience with flex fuel vehicles. We don’t have to do it alone. Indebras just has to find the right partners, and then we can make a business case, and we can either move there or sell the technology from here. We have a lot of possibilities to support the American market,” he explains.

Another company which is stating that exports are here to stay is Mardel. “We export directly to the United States, Mexico, Argentina and even China (indirectly through a customer). Mardel is finding alternatives to enhance its exports. In parallel, we import machinery, equipments and components in order to have the most up to date technology in the business and fully support the technical demands of our clients,” says Francisco Marins Palacio, the company’s CEO.

We find examples in all ends of the value chain. Tegma, a logistic provider, has successfully entered the Venezuelan market. “The automotive industry is expected to be integrated regionally; which means that the biggest investment structures and companies are focused not only on one country but on the region Latin America. While the Brazilian market grows 30%, the Venezuelian market grows 50%,” says Gennaro Oddone, Tegma’s President - CEO.