

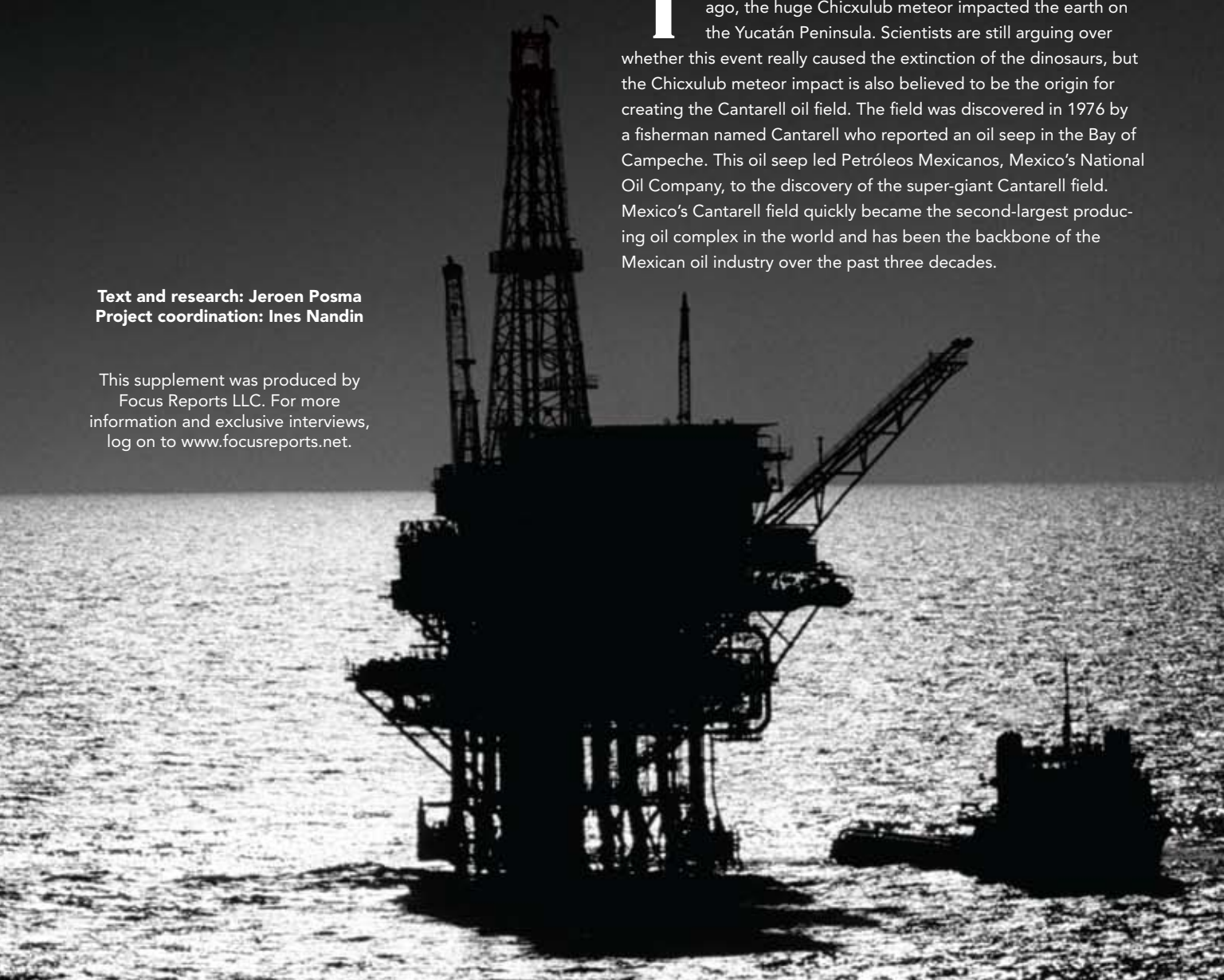
MEXICO Pt.2

New times, new opportunities

Towards the end of the Cretaceous, 65 million years ago, the huge Chicxulub meteor impacted the earth on the Yucatán Peninsula. Scientists are still arguing over whether this event really caused the extinction of the dinosaurs, but the Chicxulub meteor impact is also believed to be the origin for creating the Cantarell oil field. The field was discovered in 1976 by a fisherman named Cantarell who reported an oil seep in the Bay of Campeche. This oil seep led Petróleos Mexicanos, Mexico's National Oil Company, to the discovery of the super-giant Cantarell field. Mexico's Cantarell field quickly became the second-largest producing oil complex in the world and has been the backbone of the Mexican oil industry over the past three decades.

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For decades the majority of Mexico's oil output has come from the Cantarell oilfield, which is located in the Bay of Campeche

After years of underinvestment in exploration and production the decline of Cantarell, the world's second-largest oil field, is creating an urgent need for PEMEX to gain access the financial and technological means that will safeguard Mexico's future oil production capability. According to an official statement, "PEMEX's efforts are concentrated in pursuing the strategic

has started its declining phase. "The only thing that would stop that decline is a series of really major discoveries," warned Adrian Lajous, who served as Director General of PEMEX between 1994 and 1999. "The major challenge is that after having developed this quite extraordinary set of super giant fields the era of easy oil, of low-cost oil in Mexico is over, as in any other place in the world.

The increase in global oil production in the late 1990's and the first years of this century has essentially come from brownfield developments in Western Siberia. "I think there are enormous opportunities, profitable opportunities, of doing something similar in some of the traditional producing areas

The pessimist sees difficulty in every opportunity. The optimist sees the opportunity in every difficulty – Winston Churchill

goal of keeping oil production above 3 million barrels of oil per day. Accordingly, our exploration and exploitation efforts are directed towards that goal, facing technological, budgetary and other challenges with specific initiatives."

Achieving this strategic goal is destined to be a great challenge. Today, Mexico has a relatively mature asset base and the cycle of discoveries of the 1970's and early 80's


indicators of the challenges that PEMEX will be facing to maintain crude oil production above 3 million bbl/day.

"The first challenge is the launch of several brownfield developments," he started. "The application of new technology and better engineering can raise recovery factors and will enable PEMEX to get more juice out of existing fields". Brownfield developments have proved to be very important.

PEMEX now has the challenge of having to look for oil in areas that involve higher cost and higher risk." He outlined four key issues that could serve as



Adrian Lajous, former Director General of PEMEX (1994-1999)



It's hard to tell which is really our biggest achievement.

Extracting millions of tonnes of oil from under the North Sea?

Or sending millions of tonnes of CO₂ under ground again?

Statoil is an oil and gas company with 26,000 employees and growing activities in more than 30 countries. It is the national oil company of Norway – a country where environmental care is not just a necessity, but also a national tradition. Statoil has developed an advanced method for reducing CO₂ emissions from offshore production platforms. Rather than allowing this harmful substance to destroy the atmosphere, we separate it from the produced gas and pump it back under ground, more than 1,000 metres below the seabed – one million tonnes each year. We plan to do the same in the Barents Sea from next year, and are also applying North Sea technology in our gas operations in Algeria, where the CO₂ is stored safely beneath the desert. Statoil's method of capturing and storing CO₂ has won international recognition and could play an important role in world efforts to reduce greenhouse gas emissions. Thinking ahead can sometimes mean doing things backwards.

in Mexico," continued Mr Lajous. "PEMEX has the choice between facing this challenge individually or with the support of the international service industry."

The second area of opportunity is the development of the Chicontepec area, which contains some of Mexico's most complicated oil and gas reserves. Its tertiary sands hold a very different type of resource from the crude in the large super giant fields in the south east. "The development of this very large resource will prove to be engineering intensive, technology intensive, middle management intensive and perhaps most importantly capital intensive," insisted Adrian Lajous. "This second area of opportunity will become particularly relevant in PEMEX's production maintenance strategy from 2009 onwards."

The third challenge, according to PEMEX's former Director General, is going offshore into shallow waters where additional exploration could lead to the discovery of additional resources. These shallow water areas are not very different from the ones in which Pemex has operated in the Southeast of Mexico.

"The fourth challenge, of course, is the most complex one," he cautioned. "It is the deepwater exploration and production." Although this is probably the most important challenge that PEMEX has to face, it is something that will not provide any relief in terms of additional production for many years. The period that is required between the start of exploration and first production is very long," Mr Lajous underlined. "That means potential discoveries in the deepwater in the Mexican sector are something that would only be relevant in a time frame of more than seven or eight years."

To enable PEMEX to successfully face these challenges it is critical that a more enabling operating environment is created. "This implies the development of an adequate legal, regulatory and fiscal framework for the upstream sector that is fully developed," explained Mr Lajous. "The other prerequisite is the development of the regulatory institutions associated with the new framework. That agenda has to be fully covered before we even think about any private participation in the upstream part of the business."

Logic ends where the constitution begins?

"PEMEX's monopoly is not contained within the constitution", explained Rogelio López-Velarde. The Mexican constitution states that all domestic hydrocarbons belong to the nation, that no concessions for exploration and production of these hydrocarbons are allowed, and that the petroleum industry is exclusively reserved for the state. The founding partner of López-Velarde, Heftye y Soria, a Mexican law firm specialized in the energy sector, reminded that the Petroleum Law, implemented by Congress in 1958, expanded this constitutional mandate by expanding the term 'petroleum industry' to include all industrial and commercial activities related to the oil, natural gas, oil derivatives and basic petrochemicals industry. The enactment of the Petroleum Law and the 1960 constitutional amendment outlawed exploration and production concessions and risk service contracts, as opposed to a common belief that this was initiated by President Cardenas following the 1938 expropriation.

"Thus, a legal reform, not a constitutional amendment, should suffice in order to allow competition and private investment in some activities that have been reserved to PEMEX", he added. The declining production in the Cantarell field and the resulting pressure on the federal budget are destined to create an environment that is supportive of alliances between PEMEX and international oil companies and specialized service providers. The Calderon Administration and Mexico's Congress have six years to reform the Mexican energy sector, and the need to move into deepwater exploration should serve as a catalyst for reform of Mexico's complicated legal and regulatory framework. However, it is up to Mexico's political leadership, and the Mexican people who elected this leadership, to embrace this opportunity.

The big political challenge is that the current Calderon administration will have



Rogelio López-Velarde,
Founding Partner of LVHS

to make decisions that will not have effect during Mr. Calderon's term in office. "That is why, politically also, it is so challenging to initiate the process of reform in which the current administration has to assume all of the cost of the process of reform and none of the benefits," analyzed Mr Lajous. "So it does require courage and it does require a long-term vision. Rodríguez Dávalos a lawyer with a strong energy focus, believes that the political will is there to make the essential changes to the legal and regulatory framework. "This will make a lot of projects financially viable and bankable, projects that Mexico really needs," anticipated the founding partner of Rodríguez Dávalos Asociados. However, many Mexicans are worried that simply opening up the oil and gas industry effectively goes beyond privatization of the industry and will in effect mean de-nationalization. This makes the future of PEMEX not only an ideological issue but also an issue of national interest.

Management of the petroleum industry: the Norwegian model

Norway ranks as the eighth largest oil producer in the world and is the third largest oil and gas exporter. Since oil production started in 1971 success story has gradually gained recognition as a model for the management of the petroleum sector. "We had little to build this industry on, and had to depend on foreign companies and expertise," reflected H.E. Knut Solem. The Norwegian Ambassador to Mexico continued: "At the same time it was a clear political wish to develop our own oil companies and a strong oil related industry to have as much added value as possible". The Norwegian model is not one unique way of doing things. Elements of the models applied in different countries have been integrated and adapted to the Norwegian context while there is a continuous search for potential points of improvement.

"The final result was the establishment of the 100% state owned Statoil, which will merge with Norway's second major oil company Hydro by October this year", stated Knut Solem. The Norwegian Government, the biggest shareholder in both companies, is expected to increase its shareholding in



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Knut Solem, Norwegian Ambassador to Mexico

Statoil-Hydro from 62% to 67%, but will not have a single representative on the Board, which is quite different from many other state owned companies.



Kjell-Arne Oppeboen, Country Manager of Norsk Hydro Mexico

Despite the fact that Statoil and Hydro account for 70% of production in Norway, all of the majors are present in Norway. "The Norwegian model continuously strives to create a balance between cooperation and competition, which

is attractive for investment," explained Kjell-Arne Oppeboen, Country Manager of Hydro in Mexico. The international oil industry in Norway has brought risk capital, leading edge technology, experienced people and a lot of opportunities to Norway.

"Mexico's situation now in deep-sea areas can be compared to the situation in Norway in the late 70s," analyzed Ole Petterson. The Managing Director of Statoil Mexico continued that foreign companies provided Statoil with technical support through technical alliances. "We learned from them, but in our heart we were sceptical about the participation of the big companies because it was 'our oil'," he continued. "Nevertheless, the system worked very well and nowadays I like to believe that we are good competitors of our former partners, especially in the field of technology and increased oil recovery," he emphasized. "Statoil's experience with alliances is really good, and I would recommend Pemex to try the same strategy."

For the moment, private participation in the Mexican upstream sector remains impossible under the current legal, regulatory and constitutional frameworks. Despite the constraints, IOCs and NOCs have set up shop in Mexico in anticipation of potential change and emerging opportunities. Statoil opened its office in Mexico in 2001, making it the first upstream company with an office in the

country. "Statoil had a vision, but every year Statoil discussed whether having an office in Mexico was worthwhile," put Ole Petterson. In March, when he hosted Helge Lund, Statoil's President and CEO, and Statoil's International Executive VP they assured him that Statoil is prepared to still be patient.

Should PEMEX reinvent the wheel?

"Our long term ambition is deepwater exploration and production," proclaimed Mr Petterson. "However, this is something that Mexico, and the Mexican people, will have to decide. We can just be available if they need us." According to Statoil, an alliance with PEMEX in deepwater should include the sharing of risk and investment, but also the sharing of loss and profit. "We are definitely available for this sort of alliances," underlined Mr Petterson

Whether alliances under the Statoil definition will materialize in the near future remains uncertain. When asked about its definition of an E&P alliance with an international partner, PEMEX sticks to the Mexican regulation: no production sharing contracts, no risk contracts.

Mexico and PEMEX faces great challenges, specifically in the development of the deep-sea resources and increased oil recovery, and the question is who is really missing out on an opportunity. Additional risk capital and access to deepwater technology could boost PEMEX's exploration and production activity, and the international oil and gas community is more than willing to cross the US-Mexican marine border. Statoil is already a top ten player in the US Gulf of Mexico. "It would be natural for us to cross the border. We have the deepwater technology that could unlock Mexico's deepwater potential and are world leaders in subsea development and increased oil recovery," stressed Ole Petterson.



The merged company Statoil-Hydro is going to be the largest company in the world in terms of offshore production in water depth exceeding 100 meter. "Statoil-Hydro will be producing, as operator, almost three million barrels per day, which makes us twice as large as the number two in these water depths," boasted Mr Oppeboen. The merged company will have a strong position on developing new technology, doing focussed research when needed, and be an attractive new partner for oil companies.

Technology development has enabled Norway to optimize the producing life of its oil fields, an expertise that could prove highly valuable for PEMEX. "When Statoil develops an oilfield we start thinking about increased oil recovery from day one, as

opposed to the day that the field starts declining," highlighted Mr Petterson. "We have experienced that the Net Present Value of our projects increases significantly when we pursue a recovery factor that is as large as possible." Statoil might not reach peak production in the short term, but optimizes the production life of its fields. In the current situation in Mexico that is probably difficult. Nevertheless,



Ole Petterson, Managing Director and Exploration Manager of Statoil Mexico

the Cantarell Field is declining and taking a long term production optimization approach to compensating for its decline is a huge challenge.

In the waiting room

"PEMEX has been in this wonderful place where it has been exceedingly easy to produce crude, but that is now changing with the decline of Cantarell," clarified Benigna Leiss. Chevron's representative in Mexico has witnessed an increasing level of awareness that there is no other Cantarell around. "What I am really saying is that PEMEX has not yet faced producing in a difficult environment," she underlined. Of course, Chevron has joined the ranks of Statoil, Hydro, Petrobras, ExxonMobil, Shell, Repsol and BP to offer its services to PEMEX. The company is top notch in the world in deepwater exploration and production as well as heavy oil.



Benigna C. Leiss, Chevron Representative for Mexico

"These are the two areas in which we can see ourselves working with Mexico and in Mexico," noted Benigna Leiss. Even though Chevron clearly stated that Mexico is of great strategic importance to the company, PEMEX yet has to select the partners it finds of strategic importance to the development of the Mexican oil and gas industry. However, Chevron finds itself in good company in the waiting room.

Spreading sustainability in the meantime

The Dow Jones Sustainability Index ratings, which track the financial performance of the leading sustainability-driven companies worldwide, ranked Statoil on the top spot in the "oil and gas" category for the third year in a row. While the political discussion on foreign participation in the Mexican oil industry is far from being concluded, Statoil is building on its sustainability track record by concentrating on agreements such as the recently signed deal to reduce carbon emissions from the Tres Hermanos oil field.

"The carbon emissions agreement is an opening in a new area for us," stated Ole

Petterson. Pemex and Statoil recently signed a deal to reduce carbon emissions. The aim is to reduce carbon emissions from the Tres Hermanos field by two million tonnes of carbon equivalent by 2018 through reduced flaring. This clean development mechanism project is based on Statoil purchasing carbon quotas for future emission reductions. "In

the future, we will be expanding our cooperation in the carbon emission-reducing projects," added Mr Petterson, who indulges his personal passion for the outdoors through fly fishing trips in Mexico. "Actually, it is the first project in which we can have some profit in this country. It is not much, but it is a good start," he concluded.



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Three critical success factors for Petrobras

"Brazil was for many years the "pasado manana", which means tomorrow's market," stated Knut Solem, Norway's Ambassador to Mexico. Over the past decade this undoubtedly changed. In the past, Petrobras was looking for global benchmarks in each area of operation, regardless of whether they are IOCs or NOCs, and strived to meet and beat the standards. Today, Petrobras has become the benchmark in many areas of operation and the government-ran company is widely considered as the Latin American success story in the oil and gas industry. "We are trying to be the number one in everything we do," confirmed Milton Costa Filho. The Director General of Petrobras Mexico continued that the Brazilian success cannot simply be copied to Mexico. "I think that the two countries and two companies have faced different scenarios and situations. Ten years ago, in Brazil we were looking for oil. Our challenge was to discover oil. Mexico has a different problem; it has to manage its oil reserves. This requires a completely different strategy and completely different behaviour from the company, its employees and the government," analyzed Mr Costa.



Milton Costa Filho, Director General of Petrobras Mexico

He identified three main reasons why Petrobras is doing well today. The first factor is technology. Petrobras has always believed that technology is a major driver of success in the oil industry. "We opened our R&D centre more than thirty years ago and have continuously invested a great deal of money and effort in R&D activities, even when oil was at US\$9 a barrel. Petrobras has a policy to invest over 1% of its profit in technology every year," explained Mr Costa. For example, at the end of the 1980s Petrobras started a special technology development project for deepwater production with a target of 1000 meters water depth. After five years that target was reached. Then Petrobras started the second phase to reach 2000 meters, which was achieved after five to six years. At present, the company is about to finish the third phase that will enable Petrobras to operate in 3000 meters

water depth. "This is not Petrobras' isolated effort," emphasized Milton Costa. "We developed these technologies with the rest of the industry through cooperation with IOCs and NOCs, universities and research institutes. We share the risk and the benefits." Petrobras has experienced a snowball in its research and development activities and today has cutting edge technology. "For each dollar we invest in our R&D centre we get a return of ten dollars," he boasted.

The second reason for Petrobras success is the focus on human resources, which is also an investment with a long term payback. To prepare for the inevitable increase in deepwater exploration and production activity, PEMEX is currently training 50 researchers to obtain Master's and Doctorate degrees in deepwater technology. This initiative follows Petrobras' research and training model, but whereas Petrobras assigns 1% of its revenue for training, PEMEX barely assigns 0.05%.

The third success factor is capital discipline. Petrobras has been listed in the stock market since 1959 and has learned how to benefit from its public listing. At present, the Brazilian government holds 56% of the voting shares and thereby controls the company, although this shareholding represents less 40% of the total capital of Petrobras. "Forty percent of the shares of Petrobras are traded in the New York Stock Exchange, and our share price increased by 600% over the past five years," emphasized Mr Costa. "As a result of this capital discipline we have managed to make the right investment decisions which resulted in a US\$12 billion profit last year."

Being in Mexico is part of Petrobras' international strategy. Petrobras started its international activities in the 1970s when the oil price was very high and Petrobras was only producing 15 to 20% of the country's needs in Brazil. "In our more than thirty years of experience abroad, Petrobras, as a national oil company, has learned how to operate in different countries, different cultures and different legislations, cooperating with both NOCs and IOCs, as an operator and as a partner in joint ventures," stated Milton Costa. "This

international capability is a very important part of Petrobras' competitiveness."

Cooperation, not competition

The international expansion, which started as a necessity, now serves Petrobras' primary objective of becoming the leading oil and gas company in Latin America, for obvious logistical, cultural and business reasons. "When talking about Latin America we cannot forget Mexico, a country with a GDP almost the size of that of Brazil," noted Mr Costa. Since the Calderon government came into power there has been a lot of interaction on energy issues between the Mexican and Brazilian governments, as well as between PEMEX and Petrobras. The first tangible result of this increasing cooperation is the recently signed technology agreement between PEMEX and Petrobras.

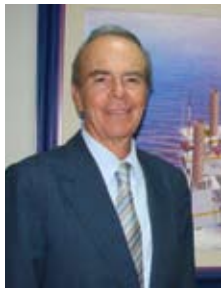
Through this technology agreement Petrobras is assisting PEMEX in reaching the required level of technological advancement to start unlocking Mexico's deepwater reserves in the short term. Today, developing this technology would take less than ten years, but PEMEX has to move right now," emphasized Mr Costa. PEMEX will have to go through the learning curve in order to apply this knowledge. "I think that the idea behind the technology agreement that we have with PEMEX is really to interact and exchange information, knowledge and experience. PEMEX has a lot of experience and knowledge in onshore exploration and production, which we do not have. We can learn a lot from PEMEX and PEMEX can learn a lot from our deepwater experience," continued Milton Costa. "The favourable point is that Petrobras and PEMEX are national oil companies and not competitors in the market. We can join efforts and develop together."

E&P through the eyes of a Mexican drilling operator

When Ing. Patricio Alvarez Morphy Camou joined Perforadora Central in 1971, twelve years after his father founded the company, the boom of the Mexican oil and gas industry yet had to be triggered by the discovery of the Cantarell field. At that time, Perforadora Central had an on-going operation with an increasing number of posted barges, drilling for PEMEX in the South East

of the country. Developing hand in hand with PEMEX, Perforadora Central subsequently got involved in drilling activities in shallow water in the State of Veracruz and the State of Tabasco.

"In those days we were drilling mainly in the Tertiary sands," remembered Ing. Morphy Alvarez Camou. For a long time, PEMEX had been trying to drill through the Tertiary sands and reach the Cretaceous level. Reaching those depths created a lot of mechanical problems because of challenges posed by mud materials. "At that time, we helped PEMEX by bringing in an experimental technology to utilize oil-based mud," noted Ing. Alvarez Morphy Camou. After applying this technology for the first time in the Samaria field, Perforadora Central started developing the Cretaceous and the Mesozoic fields. After PEMEX began



Ing. Patricio Alvarez Morphy Camou, Director General of Perforadora Central

breaking the Cretaceous barrier, production started increasing very rapidly. "Back in those days, only one other company, Permargo, which used to belong to Jorge Diaz

Serrano, was offering our type of drilling services with barges." However, we were competing on a very friendly basis with Permargo," stated Ing. Patricio Alvarez Morphy Camou.

In 1976, when Jorge Diaz Serrano was appointed Director General of PEMEX, Mexico was already at breakeven as far as oil production is concerned while before that Mexico was an oil importer. Nonetheless, the big potential in the Gulf of Mexico would not be developed until Diaz Serrano, as Director General of PEMEX, started a big drilling campaign. "There were about three or four jack-ups and one semi-submersible rig operating in the Gulf of Campeche.

The semi-submersible had a catastrophic accident on the well Ixtoc, but the jack-ups made many important discoveries, mainly the Cantarell field," emphasized Perforadora Central's Director General. "Then everything changed." The development of the offshore fields sent production up soaring, turning Mexico into a major oil exporter.

Booming offshore production did not result in a big increase in mobile drilling units, since PEMEX installed fixed platforms and used platform rigs in order to drill development wells. As a consequence, Perforadora Central did not get involved in offshore drilling until 1990.

Nowadays, the market is very different from the 1970s. There are about 50 rigs and 30-35 jack-ups operating for PEMEX in Mexican waters. Demand is high and the drilling market is enjoying a very good time. Perforadora Central, operating three jack-ups and one platform rig, is facing fierce competition in its home market from companies such



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as Noble, Pride and Todco. While these international players are scanning the globe to optimize return on investment for their rigs, Perforadora Central has a preference for working with PEMEX. Its competitiveness is driven by low overhead costs, a thorough understanding of Mexico's geology and the deployment of state of the art equipment.

A new era for drilling in Mexico

Three years ago, Perforadora Central acquired an independent leg jack-up called Tonalá, which has 2200 horsepower mud pumps. "It was the first time that PEMEX has ever used hydraulic horse power of this nature, which enabled us to save a lot of time with respect to the programmed timeframe for each individual well, and we have been very lucky in obtaining very favourable results in drilling wells," realized Ing. Alvarez Morphy Camou. The performance of the Tonalá in the Ku-Maloob-Zaap field is particularly important to PEMEX since this field is being developed in order to replace, if possible, the production that is being lost as a result of the decline of Cantarell. "We believe that the time is right to expand our fleet and we know that PEMEX will welcome another jack-up rig from a Mexican drilling company," emphasized Ing. Patricio Alvarez Morphy Camou.

"There is going to be a new era for drilling in Mexico, the era of deepwater semi-submersibles," recognized Ing. Patricio Alvarez Morphy Camou. For now, Perforadora Central is successfully participating in the deepwater opportunities by joining efforts with companies such as Petrolia Drilling and Larsen Oil & Gas. "The drastic increase in demand for deepwater semi-submersible rigs caught all contractors around the world with their pants down. How is it possible that a big industry like ours was not able to anticipate these developments? It is a tremendously good market at the moment, too bad we don't have a deepwater semi-submersible rig yet."

Optimal capacity rather than overcapacity

The key to the successful cooperation between Pegaso Air Transportation and PEMEX, which started in 1983, was strategic

planning. While demand for air transportation services increased hand in hand with the number of offshore platforms, Enrique Zepeda Navarro and his father have overcome many challenges in this highly capital intensive industry.

As Executive Director of Pegaso, Mr Zepeda made the strategic decision to face these challenges, created by both PEMEX and the competition, through the implementation of an ISO 9000 quality management system in 1998. "I had the plan to certify since May 1996, but my father was still running the company and did not want to do it at that time," he remembered. "In 1997, PEMEX put out a tender requesting ISO certified suppliers, which made it a lot easier to go ahead with the certification process," explained Enrique Zepeda, who was named Executive Director in 1997. He implemented the certification of all processes from top to bottom, including maintenance, mechanics, pilots and administration. This resulted in the streamlining of the company that enables Pegaso to operate at lower cost than its competitors at present.

PEMEX's gradual shift from shallow to deep water is not expected to affect the fleet requirements for Pegaso, since the first four deepwater rigs that will start drilling this year operate at only 110 nautical miles offshore. "Everybody thinks that deepwater implies operating at least 200 nautical miles offshore, but that is not true," noted Mr Zepeda. "Our main challenge will be that, as PEMEX is shifting from Cantarell to other fields over the next years, our fleet will be spread out over different regions in the gulf."

For many years, Pegaso was the smallest company in the Mexican air transportation market, but the company has been growing steadily. "In addition to working with PEMEX we also have contracts with Cotemar, Schlumberger, Halliburton, Pride,"

emphasized Mr Zepeda. Nevertheless, Asesa is the biggest player in the Mexican offshore helicopter sector at the moment. Although both Pegaso and Asesa operate fifteen helicopters, Asesa has a higher turnover due to the larger size of its helicopters.

Pegaso's fifteen helicopters, all Eurocopter helicopters, are more modern and faster than the competition. The average number of passengers in the Gulf of Campeche is nine passengers. "This means that with 13 seats in the 412, the main helicopter used by Asesa, you have overcapacity. PEMEX only fills up the 13 seats on the first flight in the morning and for the rest of the flights, which generally take 7 to 8 passengers, they are paying for overcapacity," explained Pegaso's Executive Director. "Our fleet consists of nine seat helicopters, so that is a perfect match."



Enrique Zepeda Navarro,
Executive Director of Pegaso
Air Transportation

PEMEX has a tender for 19 passenger helicopters, but I don't think that this is the most economical solution," he continued. "It does not make economic sense to operate this kind of helicopter unless you have a large passenger volume going to one destination. In addition, only one platform will require the range of the 19 passenger helicopter. However, if this is what PEMEX requires then I will provide it."

With its current fleet, Pegaso Air Transportation can reach any other platform at half the price of the 19 person helicopter. "To stay ahead of the competition I will continue to offer PEMEX the best price possible, better than the competition," concluded Enrique Zepeda Navarro.



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Introducing the first FSO

PEMEX worked with production and storage vessels back in the 1980s. At the time, the company operated two big vessels The Misinaky Floga and The Enterprise. Although these vessels were not of the same standard as the FSOs and FPSOs that are operating in the industry now, PEMEX gained experience in this area. Nevertheless, PEMEX turned to the private sector when it contemplated the prospect of an FSO for the Cantarell field.

Shashank Karve, President of MODEC in the USA, was pursuing the contract that would allow his company to bring the first FSO to the Gulf of Mexico. MODEC, part of the Mitsui Group, is a global company



Enrique F. Westrup Neira,
MODEC Representative

with major offices in Tokyo, Houston and Singapore and support offices in Abidjan, Bangkok, Belawan, Darwin, Jakarta, Kapellen, Lagos, London, Mexico City, Perth, Rio de Janeiro and Vuang Tau. Even though MODEC was operating in different countries, working in conjunction with various local companies, the company did not have a presence in Mexico at the time. Following the advice of an ex-colleague Mr Karve turned to Enrique Westrup with the request of becoming MODEC's representative in Mexico. In 1998, after winning the contract, MODEC and Mr Westrup created a special purpose company for the operation of the vessel. In accordance with MODEC's philosophy of focussing on growing local capabilities to support the operations this company has become the driving force behind the Ta'kunta project.

"When the EPC contract started with PEMEX, we were on time, in budget, which is something remarkable," remembered Mr Westrup. Since first oil in August 1998, the FSO Ta'Kuntah has been operating continuously for more than eight years. On March 19, 2007 surpassed the milestone of 800 million barrels of crude oil offloaded to export tankers, which is a unique milestone in the industry worldwide. In 2006, the FSO

offloaded to 246 tankers at a frequency of less than 36 hours per offload, which equates to an export quantity of 146 million barrels or 400,000 barrels of oil per day. Permanently moored in 267 ft of water, the Ta'Kuntah's offloading system allows export tankers to moor either in tandem and/or side-by-side simultaneously.

"We created a very lean organizational structure to operate the vessel," noted Mr Westrup, who has managed the introduction of the Ta'Kuntah to the country, maintenance of the vessel, logistics for spare parts and the recruitment of the crew on board of the vessel, which is a mixture of nationalities consisting of almost 50% Mexicans while the officials are Italian. "Since the Ta'Kuntah started operations, under a fifteen year contract term, it has not experienced downtime. In addition, the Safety, Health and Environmental record of the FSO Ta'Kuntah has been outstanding, without any instance of oil pollution or serious personal injury", boasted Enrique Westrup. MODEC is the first offshore operator to drive 6 Sigma Lean to every level of the workforce and the first company to marry 6 Sigma and Behavioural Safety to develop a world-class measurable Behavioural Safety System.

Aiming for early production

As Cantarell's production is declining PEMEX has to accelerate the development of its reserves to maintain the current production level. The actual cost of every deepwater well will be in the range of US\$ 80-90 million, and a field you might require several wells to really justify development. "The time gap between the discovery of a field and putting it into production is about three to five years. Investing in an FPSO allows for early production which accelerates the return on investment and makes financial resources available for further exploration and production activities," underlined Enrique Westrup. Bringing an FPSO into the country remains one of MODEC's key ambitions, however, Mr. Westrup emphasized that MODEC is not only an FSO/FPSO company. "As an EPC contractor and operator of units, also positioned to offer TLPs and semi-submersibles, we are seeking opportunities to participate in Mexican market with our technology," concluded Mr Westrup.

Competition in the Mexican offshore market

"From my point of view there are still few players in the Mexican offshore services market, and I believe in competition," stated Antonio Juan Marcos Issa. Following a long career in PEMEX he became the President of Blue Marine Technology Group, which was founded in 1998 by his son in law, Juan Reynoso Durand. "Between 1996 and 2007, PEMEX investment in exploration and production increased from US\$ 3 billion to US\$ 13.9 billion annually. This was an opportunity," reflected Antonio Juan Marcos Issa.

At the end of year 2000 Blue Marine brought the first specialized vessel for offshore construction and maintenance from Norway to Mexico. "The companies who provided offshore services to PEMEX used to work with old equipment and old vessels," remembered Juan Reynoso Durand. "We entered at a very important moment, when PEMEX decided to increase demand for high technology vessels providing greater effectiveness, speed and safety." In addition to new technology, Blue Marine also brought better prices, improved cost efficiency, lower fuel consumption, larger cranes and other new characteristics to Mexico's traditional vessel market.

"Since Blue Marine introduced the first new vessel, the specifications of the tenders really changed PEMEX's decisions," noted Antonio Juan Marcos Issa. "The rest of the players in this market, such as Grupo Diavaz, Oceanografia and Fugro, started automatically to upgrade their fleets. In less than one year PEMEX changed their specification policy requiring younger vessels," added Juan Reynoso Durand. Nowadays, PEMEX request vessels to be less than ten years old.

The philosophy of Blue Marine has always been to focus on areas where there is no or limited competition. In 2003, there was a tender for geophysical and technical work, and given the mergers and acquisitions scenario in the Mexican market there was only one player. "We saw this as an opportunity," emphasized Antonio Juan Marcos Issa. Blue Marine made a joint proposal, with a Canadian and a Mexican company, offering a 40% cost advantage over the competition. "Since then, PEMEX has been paying less than 50% of the previous prices," noted Antonio Juan Marcos Issa. "We are contributing to

MODEC builds on experience

MODEC is a pioneer and world leader in FPSO, FSO and TLP technologies. In business for more than 30 years, MODEC has seen the industry expand and contract, has weathered the storms and continues to lead the way.

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Our varied experience allows us to handle the full range of client parameters, even those that are seemingly in conflict with each other such as the need for advanced technology and budget sensitivity.

A clear path from where you are to the results you absolutely must achieve: this is what the MODEC experience provides.

MODEC builds relationships

MODEC leaves no possibility unexplored, no parameter unconsidered and no client objective unaddressed. This approach reassures our clients that they will be able to achieve their own key performance indicators and meet the expectations placed on them. Dedicated to our clients' success, MODEC meets not only delivery and budget needs, but also excels in health, safety and environmental issues and in the community development. We build relationships with our clients, our employees, our communities, our contractors and our fabricators.

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MODEC builds confidence.

As deepwater oil and gas production demands increase, the risks and expenses inevitably increase with it. MODEC is responding with innovative technology geared toward creating advanced systems that address the challenges while holding the costs down. More than ever, safety has been placed at the top of operator's priority lists. MODEC is serious about HSE and as a result is the best partner a client could choose to work with. This alignment of priorities is how we have been able to achieve a Lost Time injury Rate that's well below the industry average.



MODEC has also earned a reputation for being on time and within budget, and we are proud to report that we have achieved remarkably high marks in uptime and total client satisfaction. Put that together with a clean environmental record and a real commitment to improving the communities in which we do business, and it is easy to see why our clients choose MODEC.

Superior technology, capability, responsiveness, cost-efficiency and safety: working with MODEC builds a client's confidence.





The Yuum K'ak'náab, which is Mayan for "The Lord of The Sea", is Mexico's first FPSO

the success of PEMEX and always strive to create a win-win situation. Our prices and services will enable us to play an important role in the long run. Confidence is the name of the game and you have to construct this confidence with your suppliers, your partners and your clients."

Based on the recommendation of a Scandinavian partner in the offshore business, Blue Marine started a relationship with Bergesen Worldwide, a Norwegian company that brought up the idea of providing an FPSO for Mexican waters. "Based on our reputation with our suppliers, as well as within PEMEX, we started pursuing this idea," stated Juan Reynoso Durand.

In May 2004, Blue Marine met PEMEX to introduce early production solutions for the Ku-Maloob-Zaap field. "The solution consisted of introducing an FPSO to start production while the fixed infrastructure was being developed in a new field or on new wells," noted Antonio Juan Marcos Issa. "PEMEX was familiar with the FSO Ta'Kuntah and was very interested in the FPSO solution and its added value," stated Juan Reynoso Durand. To provide PEMEX with a better

understanding of the flexibility that an FPSO can offer, Blue Marine organized a mission for a team of PEMEX engineers to Equatorial Guinea, where Bergesen is operating an FPSO with GEPetrol.



Antonio Juan Marcos Issa (left) and Juan Reynoso Durand of Blue Marine Technology Group

Subsequently, PEMEX decided to modify the concept of the Ku-Maloob-Zaap project and contract an FPSO for the long term. After a preparation period that ranged from August 2004 to July 2005, PEMEX launched the tender. The contract was awarded to Bergesen Worldwide Offshore which brought FPSO Yuum K'ak'náab, which is Mayan for "The Lord

of The Sea", to Mexico. Since the preparation of the tender, Blue Marine has focussed on the legal, environmental and labour aspects related to the project. In addition, Blue Marine has integrated local suppliers, optimizing the Mexican content in Yum Kak Naab's operation and maintenance and will provide services such as logistics and crew management once the FPSO starts operations.

"The recent delivery of the first FPSO to PEMEX by Bergesen Offshore is the biggest bilateral commercial project in the energy sector", stated Knut Solem. As Norwegian Ambassador he hopes that this flagship project will be an incentive for other Norwegian companies to give more attention to opportunities in the Mexican market.

Future opportunities for Blue Marine, assessed Antonio Juan Marcos Issa, will be pursued in the development of the deepwater area. "In deepwater, in addition to drilling and FPSOs, we're confident on adding value in subsea production as well as geophysical, geotechnical and seismic work. We want to take advantage from the acquired experience of bringing the first FPSO to Mexico, and use it for the next ones," he proclaimed.



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The past: building on experience

SCAP was founded in 1993 by Ing. Joel Arratia and his oldest son Eduardo. Throughout his 35-year career in PEMEX, Joel gained in-depth experience in all segments of the oil industry, including refining, petrochemical, natural gas and offshore platforms. Complementing his father's experience, Eduardo Arratia, an engineer by background, contributed enthusiasm, energy to undertake the business and a global vision to the start-up company. "In order to succeed in the competitive jungle of the Mexican oil and gas industry, SCAP embarked on a strategy of measuring risks and studying opportunities", remembered Eduardo Arratia. Over time, other Arratia family members such as Ileana, Ricardo and Alejandro Arratia joined the rapidly growing organization. "The resulting mixture of experience, strength and youth has become our most important asset", recognized Eduardo Arratia.

Since the beginning, SCAP continuously strived to differentiate from the competition. To accelerate its progress along the learning curve SCAP signed a joint venture with world leading companies in niche areas of the oil and gas industry, subsequently representing them in Mexico. As a result, SCAP has been able to provide PEMEX with the latest technology, put in place by a Mexican team of experts.

"Working with PEMEX has been an invaluable catalyst for SCAP's progress towards operating at the highest-quality standards", emphasized Eduardo Arratia. PEMEX's sets the highest standards for projects involving offshore platforms, but through the efforts of each specialist working at SCAP we have completed many projects successfully.

The present: leading edge technology

By now, SCAP has four business units: Construction, Safety Systems and Automation, Business Performance Management Solutions and Chemical Products. Each business unit relies on state of the art technology which is provided by foreign partners and adapted to the specific market requirements of the Mexican oil and gas industry by SCAP.

SCAP's Construction unit is a market leader in the offshore installation of crude oil treatment plants. While everybody knows that Cantarell is in an advanced phase of production and reserves are declining, many people are not aware of the fact that the remaining crude is of inferior quality. PEMEX selected SCAP for the installation of a chemical plant on a platform in the Cantarell field to treat this crude before further processing. "The installation of this plant, which is Mexico's first offshore plant for dehydration, desalting and the separation of gas and crude oil, has become our flagship project", boasted Eduardo Arratia. "In addition, we



Eduardo (left) and Joel Arratia, respectively Vice President and Director General of SCAP

have completed rehabilitation maintenance jobs in numerous PEMEX installations."

For more than 10 years, SCAP has operated in partnership with ICS TRIPLEX, a British leader in critical safety systems. "We are in charge of providing the operation and maintenance and safety systems for 50% of the platforms in the Cantarell field, including the emergency shutdown system implemented to avoid accidents, gas leaks and fire problems," noted Eduardo Arratia. "These systems are the soul of a platform in terms of protection."

The Information Technology division represents Hyperion Solutions, the worldwide leader in Business Performance Manage-

ment Software, in Mexico. "Together we deliver visibility into our client's business and drive performance improvements by better aligning goals and metrics, and increasing operational efficiency". On the other hand, a wide range of options to resolve maintenance problems for industrial installations is proposed by the Chemical Production unit, which has particular expertise in the removal of rust from platform systems.

Presently, SCAP is collaborating with the most important governmental agencies in Mexico as a technology advisor. "We capitalize on our business understanding and technology experience to assist these agencies in defining their business strategies, bringing non-accountable benefits to their performance," assessed Eduardo Arratia.

Fifteen years of experience in the Mexican market have transformed SCAP into a solid company that can count on the support of Mexico's most important financial institutions in order to meet the financial requirements of its projects. Over this period, SCAP has established a strong international reputation. While not many local companies have proved to be successful in establishing alliances with foreign companies, SCAP has put together a strong track record through cooperation with international players.

The future: fresh ideas and ambition

The next generation is gradually taking over, and with an average age of around 30 SCAP's 200-people workforce is full of fresh ideas and ambition. This might prove to be the critical success factor in staying at the forefront of meeting PEMEX's future needs. "PEMEX is facing many challenges and we are foreseeing the arrival of many international companies to the Mexican market," anticipated Eduardo Arratia. "We have the knowledge and understanding of the Mexican market and can affirm that the foreign companies will need us."

At the moment, SCAP already has people working in Korea, Nigeria, U.S, Venezuela, and is continuously searching for opportunities to further expand its services overseas. "We are ready for new adventures; SCAP is a Mexican-international company," concluded Eduardo Arratia.

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Technological innovation is the key for growth

In 1992, after graduating as a Geophysical Engineer from the Instituto Tecnológico in Madero, Vicente González Dávila founded Geo Estratos. Initially, his company was providing services to detect reservoirs in non-deep areas that are provoking emanations and spills, and therefore soil contamination. An early focus on low budget research with high rentability results allowed Geo Estratos to grow significantly. "I started by myself, and now Geo Estratos has more than 300 employees," reflected Mr González Dávila.

The company has developed technologies to detect leaks in wells and pipelines, by identifying fractures or fissures in the casing, before they become a real serious environmental hazard. Geo Estratos is also developing a mature reservoir monitoring system, which facilitates the development and design of exploitations systems based on the understanding of the lifespan. "Furthermore we have developed tech-

nologies for soil exploration. While certain fields are denominated as immature, we call them 'non-understood reservoirs'," explained Vicente González Dávila. "Our main contribution to the value chain is identifying these problems and solving them, thereby increasing the hydrocarbons recovery rate, and avoiding the abandonment of reservoirs before they mature."

Some of the environmental problems, such as spills, which might have been there for hundreds of years, are now being considered as an economic possibility as Geo Estratos is capable of redirecting those hydrocarbons into the main production steam. Identifying a fracture on a casing timely allows the implementation of low cost solutions. "So basically we transform a problem into an economic viable solution," clarified Mr González Dávila.

Geo Estratos invests 60% of profit in research while 40% of the workforce is dedicated to research and new technology development. This focus on technological innovation has resulted in patents in areas such

as detection system for leaks in non-metallic pipelines, methods for ultra-heavy oil improvement, leak detection systems on casings that function without stopping the well's operation and geoelectric exploration methods that provide low cost tools for low production fields. "This investment strategy, which exceeds the risk profile of many companies, enables Geo Estratos to break paradigms in areas where this was deemed impossible," explained Mr González Dávila. "Investing the majority of our profits in research allows us to develop rapidly along a steep learning curve, permitting the company to become technologically self-sufficient and accelerating Geo Estratos development as a mature company."



Ing. Vicente González Dávila, Director General of Geo Estratos

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The eyes of PEMEX

On May 31st 1949 Rotenco registered its first well, which makes Rotenco the oldest mud logging contractor for PEMEX. This very important task was performed by engineer Guillermo P. Salas, the founder of Rotenco. Over the past decades, Rotenco has worked with PEMEX and its technological capabilities have grown hand in hand with the technological developments required by PEMEX. Almost 60 years after the company's creation Alejandro Salas de la Borbolla is preparing to take control of the company. As grandson of the founder and nephew of the current Director General, Jaime Bracho, he will be facing the challenge of integrating Rotenco's experience and knowledge of Mexico with leading edge of technology that will be accessed through technological alliances.

As Mexico's oldest mud logging company, Rotenco has logged most of the exploration wells that have been drilled in the Cantarell field. "Since the beginning of our operations, we have been involved in the drilling activities in the main fields in Mexico. During this time, we have logged over 5,000 wells on land and offshore," emphasized Jaime Bracho. "Rotenco is currently holding 70% of the mud logging market in Mexico. "We are the number one, and this is very important."

PEMEX's increasing investment in exploration and production, including an ambitious drilling program to keep the production level above 3 million bbl/day, is creating strong momentum for Rotenco. "If I recall well, probably only in the period 1976-1982, we experienced a moment when the opportunities for growth were as exciting as today," analyzed Mr. Bracho. After almost forty years at the helm of Rotenco, he recognizes that alliances with international


technology leaders are critical to capture the emerging opportunities and comply with PEMEX's evolving technology requirements.

"This is a perfect moment for mud logging companies to get involved in the Mexican oil gas industry, and Rotenco is the ideal partner," boasted Mr. Bracho. We look forward to facilitating the entry of poten-

tial partners in the Mexican market while increasing our presence in the international arena." Rotenco's recent ISO 9001: 2000 certification strengthens its value proposition to the international mud logging industry, but it will be up to Alejandro Salas de la Borbolla to keep this family business at the leading edge.



Lic. Alejandro Salas de la Borbolla (left)
and C.P. Jaime Bracho Pizá



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Entering the Mexican energy sector

Doing business in the Mexican energy sector starts with the strict bidding processes of PEMEX, the Energy Regulatory Commission (CRE) and Mexico's parastatal electric utility CFE. These three government entities have to operate within a very tight and complicated legal framework to make this process as transparent as possible. Especially foreign companies are facing a challenge in understanding the Mexican operating environment, including the legal framework and the bidding process.

Rodríguez Dávalos, founding partner of Rodríguez Dávalos Asociados, noted that the emphasis on transparency has turned the bidding process into a procedure that requires tonnes of documents and a lot of legal, technical



Jesús Rodríguez Dávalos,
Founding Partner of Rodríguez Dávalos y Asociados

and economical work. Before founding this law firm with a strong focus on the energy sector, he held various positions at PEMEX both in Mexico and the United States.

Based on more than a decade of experience in Mexico's energy industry, he believes that

the success of local law firms such as Rodríguez Dávalos Asociados is based on their thorough understanding of both their client and the client of their client, which is PEMEX, CRE or CFE. "The Mexican energy sector has been closed for so many years that it does help to be an insider", he emphasized. Transmitting this understanding of the Mexican energy sector and the parastatals,

in addition to the legal framework, has proved to be one of the key success factors for his firm.

Managing 'Mexicanization'

The Latin American business environment has characteristics that stretch across national borders, but large infrastructure projects in Argentina and Mexico are facing distinct challenges. The first step in structuring a business in Mexico is localizing the business model. "Sometimes this is called 'tropicalization', but we prefer to call it 'Mexicanization'," explained Horacio Lopez Montes.

Infrastructure Consulting, the firm he founded and directs as General Manager, assists its clients in reducing the country risk factor by offering integrated business and tax solutions in addition to legal perspectives. "Our clients generally do their numbers themselves and we give them a little taint of reality, look at the feasibility of a project, advise on potential changes and outline certain tax advantages", he noted.

Most of his clients, 90% of the practice is foreign investment, are international companies entering the Mexican market for infrastructure projects for the first time. Mexico is a

really young country in terms of infrastructure so there is always ground to break. Eager to take on a challenge, Infrastructure Consulting has built its experience by participating large projects such as the first offshore LNG Regasification Terminal ever to be conceived for Mexico. "Over time we have built experience in dealing with first times, which is particularly good for us because even if it is a first time, we've dealt with first times before," stated Mr Lopez Montes.

Over the coming years, his boutique firm aspires to extend its multidisciplinary practice into the development of the exploration and production activity in the offshore border zone between Mexico and USA. Also, facilitating business development for IOCs and service providers and the renewable energy sector have been identified as areas of focus. "Mexico is in a time where investment opportunities are flourishing, the soil is good for investment," he concluded.



Horacio E. López Montes,
General Manager of Infrastructure Consulting

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Thinking out of the box

Endress+Hauser, a leading supplier of measuring instruments and automation solutions, has provided the oil and gas industry with solutions for over 50 years. While the Endress+Hauser brand has been present in the Mexican market for 20 years, it was not until 1999 that Endress+Hauser Mexico was established.

At the moment, the company is being transformed from an instrument seller into a complete solution provider under the leadership of Lic. Steffen Huber.

Before taking up the position of Managing Director of Endress+Hauser Mexico he visited the leading product centres for level, flow, temperature, registration, and pressure measurement, which are based in Europe, to gain a full understanding of the company's instrument approach. The second stage was getting to know Endress+Hauser's strong industry approach. "It is essential to know the industry processes very well to be a really competent partner for the industry, able to optimize their processes through the implementation of our instruments and solutions," emphasised Mr Huber. "Based on our product and process know-how we can recommend our clients the ideal solutions for their problems or the problems they would like to prevent to become even more efficient in their processes and cost savings."

When outlining the strategic direction and focus for the company. As an economist in a world dominated by engineers, Steffen Huber is trying to implement new things. This is a challenge, particularly in the rather conservative Mexican context. "If there is no outside influence bringing new ideas, then products, technologies and strategies that existed ten years ago will still be used in ten years. I want to break with tradition," Steffen Huber proclaimed. "This is where I see our opportunities and chances."

For Endress+Hauser Mexico, as well as worldwide, the oil and gas industry has become a strategic industry. "For us



Steffen Huber, Managing Director of Endress+Hauser Mexico

it is a must to be in this industry," noted Mr Huber. "Opportunities will be abundant but competition will be fierce." Our future success will be based on both direct cooperation with PEMEX, EPC companies and system integrators. In the absence of a strong correlation between the different divisions or geographic locations, PEMEX is a whole market itself rather than a single customer, which is a challenge for companies such as Endress+Hauser. Nevertheless, Steffen Huber aspires to double turnover within the next three years. "My dream for Endress+Hauser Mexico is to make sure that the company will be the first choice of the customer in the instrumentation and solution business. For this we have to think different, we have to think big and open our mind."

Ignition, fuel and oxygen

You only need three components for an explosion: energy for ignition, fuel and oxygen, which are all present in every refinery, petrochemical plant, gas production complex or platform. Most people know this, but few people know how to protect their processes. At the moment, three technology solutions are applied in the oil and gas industry. The prevalent method is intrinsic safety systems. These preventative systems reduce the energy levels, potential initiators of an explosion, in a process. The second method is pressurization, a segregation method that provides a solution for bigger products handling energy. It does not permit the entry of explosive gas or explosive dust into the cabinet where the majority of the energy is. The third

method is explosion proof cabinets.

Pepperl+Fuchs offers the first two methods, the most favourable cost-benefit solutions, in the Mexican market. "We are the market leader for intrinsically safe components and intrinsically safe decentralized peripherals," boasted Daniel Guttierrez. "Pepperl+Fuchs has long been associated with intrinsic safety and explosion protection technology and we strive to provide the best service and the best solutions to our target market, which is the oil and gas market." Based on a first mover advantage and by constantly investing in technology development, Pepperl+Fuchs Mexico is determined to stay at the leading edge of technology.



Ing. Daniel Gutiérrez, Director of Pepperl+Fuchs Mexico

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Leveraging the past in the present

In 1842, James Jones Walworth and his brother-in-law, Joseph Nason, not only founded the oldest manufacturer of valve and fittings in the United States but also started a remarkable legacy. Since its inception Walworth has been leader in the valve industry, continuously utilizing the latest technology to stay at the forefront of the trends that have shaped this industry.

Today, you can find Walworth valves all over the world but the company is no longer American, it is Mexican. Thirty years ago a Mexican group bought Walworth and relocated it in Mexico. Four years ago the company was for sale once again, and Salomon Waisburd jumped at the opportunity. "When

you are 54 years old and have the opportunity to run a company like Walworth you have to believe in it or you are dead," recognized Mr Waisburd. "I had to take this opportunity and do it."

"We were lucky because many Mexican and international companies were interested in buying Walworth," he recalled. "The Walworth name, which is a brand name like Coca Cola, has been a key driver of the success

of this company," analyzed Mr Waisburd who serves as President of Walworth. "The strength of Walworth lies in the company's unique history in combination with the new management that is listening to the people and to the market," continued Salomon Waisburd. Throughout its history, Walworth's engineers and designers have created a unique competence and knowledge base. "Nobody in the world has an equally complete mix of skills, knowledge and experience under one roof," noted Walworth's President. "This is an important part of the success of Walworth."

Bringing the future to the present

Over the past four years, Salomon and Jacobo Waisburd, father and son, have successfully positioned the Walworth name back in the market, making its once again one of the most important valve manufacturers in the world. Having sold many pipes and valves throughout his career, Salomon Waisburd realized that Walworth had a problem: the company could not deliver on time. This was the result of insufficient financial resources, which seriously harmed the company's competitiveness. As a result, many foreign competitors entered the Mexican market by shipping just-in-time from the United States or Europe. Walworth was rapidly losing market share. Mr. Waisburd realized that Walworth's problems could be



Salomon and Jacobo Waisburd, President and Vice President Operations of Walworth

solved by bringing the future to the present by producing valves before receiving the orders. It turned out to be a successful strategy.

Over the past four years, Walworth has been growing at a rapid pace. During the first year the company doubled its sales, a growth rate that was continued in the second year. Throughout the third year Walworth grew by 50% while last year growth of 40% was achieved. "This year we are going to grow 25% because we want to grow much more conservative," stressed Salomon Waisburd.

Nowadays, Walworth is shipping on time, producing at international quality standards

– following investments in radiographic testing, fugitive emissions, flow testing loops and other in-house technology - and has regained its competitiveness as well as a good share of the Mexican market, where its customer base values the opportunity to deal with a local company that has more than US\$40 million in inventories and a 500-person workforce that provides service 24 hours per day, 7 days per week.

The next step is further internationalization. A distinct advantage is the fact that Walworth operates the only manufacturing plant in Latin America. Therefore, the company is very well positioned geographically to serve the Canadian, US and Latin American markets. In addition, the company is rapidly increasing its global reach. "Customers around the world

are happily surprised to see that Walworth is back as a leading valve supplier in the international market," noticed Mr. Waisburd. His company also moved into China where it has five very specialized Walworth plants for the production of different valves and parts. From China Walworth is now supplying different parts of the world, reaching markets such as Canada, Malaysia, Qatar, Nigeria. "In addition, Chinese companies like Sinopec have already approached us since they are seeking well known, quality brand names for their new projects and expansions not only

in China but all over the world," anticipated Salomon Waisburd.

"When I bought this company many people said that they did not know if they had to congratulate me or send me their condolence," remembered Salomon Waisburd. "But turning Walworth around together with my son has been a great experience." His son Jacobo concluded: "We are shipping our valves all over the world. Nevertheless, there will be many things to do in the future and I will be around for many years to continue building this company as a leader in both Mexico and the international marketplace."

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To be or not to be

"They say that 90% of new companies fail, but belonging to this group wasn't our idea," started José Pablo Mendoza. In February 2002, he created Octopus to target the market for high engineered products, which includes state of the art pig launchers and receivers, modular plants such as gas measuring units or sweetening plants, prefabricated piping and the application of Burgess-Manning technology for separation. Unfortunately, Mexico lost quite a lot of its capacity in this area of business in the 1980s and 1990s due to PEMEX's cost-based procurement strategy that favoured international players over Mexican suppliers. However, the current upward cycle of the industry has raised demand levels beyond the supply capability of Mexican companies. "We had the team of people to take advan-



**José Pablo Mendoza E.,
Director of Octopus**

tage of this opportunity, create a company and be successful," remembered Mr. Mendoza. "Creating Octopus meant taking care of the opportunity." However, it wasn't that easy since the market for high engineered products is quite difficult to penetrate for new entrants.

What's in a name?

A reputation for quality and reliability is not established overnight. To accelerate the process of gaining market recognition, Mr. Mendoza placed great importance on providing his company with a name that would give it a head start. Officially called Productos Especiales de Alta Calidad, the company's name would be Proesac in short, which sounds like Prozac and was thus not appropriate. José Pablo Mendoza reasoned, "Apple does not sell fruit, so I decided to find a good com-

mercial name that could be sticky." Mr. Mendoza decided to choose Octopus. "I think Octopus is a little different", he explained. "While most of our competitors are 'big vessel' type of companies, we are more the 'watch engineering' for the industry."

Octopus is concentrating on the growth potential of the market for pig launchers and receivers in the state of Tabasco, which has thousands of kilometres of pipelines, the veins of PEMEX. The replacement or modernization of the thousands of old separators across Mexico presents another opportunity, as does the onshore natural gas segment. In addition, Mr Mendoza identified future prospects in deepwater exploration and production activities. "There is so much work in our current niche markets that we will not go beyond extending our offering to these current markets, I think that losing focus is what makes companies fail," he recognized. "There is a huge future in energy."



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