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BUS 519: Project Risk Management – Spring 2017

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Environmental Quality International in Siwa

04/2009-5607

This case was written by Professor Jonathan Story, Emeritus Professor of International Political Economy at INSEAD. It is intended to be used as a basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation.

When Mounir Neamatalla, President of the private Egyptian firm Environmental Quality International (EQI), first set eyes on the Siwa Oasis in 1995, in the Matrouh region of Egypt in the Sahara desert, he was enthralled. Neamatalla, a consultant who had studied environmental management at Columbia University, was visiting the oasis on a project for the Canadian Development Agency. He was struck by the fact that, with a few anachronisms, the community he was visiting could easily have been the one described by Herodotus 2,500 years earlier. Here was an ideal fit with EQI's mandate to promote sustainable development projects wherever the opportunity beckoned. Where others saw poverty and isolation, Neamatalla saw riches: a culture, tradition and heritage untouched by the passage of time.

Over the years that followed, EQI designed and implemented a number of commercial ventures aimed at promoting economic development in Siwa—one that would be in harmony with Siwa's environment and that would revitalise its unique cultural heritage. EQI's approach was to draw on the old wisdom, traditional skills and creativity of the local community, and complement them with modern know-how to develop Siwa into a model of sustainable development that could serve as a source of inspiration for other communities around the world. Some of these ventures are currently being replicated by EQI in other parts of the region.

Egypt

The past few decades have seen Egypt move from a pan-Arabic, largely socialist state at war with Israel, to an increasingly market-oriented anchor of stability in a troubled region. As one of two Arab countries that have forged peace with Israel, Egypt has played an important role in promoting dialogue between Israel and its Arab neighbours.The North African country is one of the largest recipients of American aid. In 2008, it was slated to receive $1.3 billion in military aid and another $415 million in economic assistance. With a population of 80 million, it is home to one in four Arabs.

The population of Egypt is concentrated along the Nile river banks and is urbanizing fast as rural inhabitants pour into the main cities of Cairo and Alexandria. From 43 million in 1980 to nearly 80 million in 2005, it is estimated by the UN to reach 100 million by the 2020s. Population density is among the world's highest. The urban population accounts for 42% of the total and is growing at a rate of 1.8% per annum. Farming represents 29% of GDP, industry 22%, and services 49%. Per capita income is $1,200 and the literacy rate is 57%. Water scarcity is a prime concern. Roughly 96% of Egypt's land mass is made up of desert. The only arable regions in Egypt are the green floodplains that line the Nile basin. Urbanisation is eating into scarce arable land and putting the environment under great stress.

Politically, Egypt is still a highly centralised republican state in the midst of a process of political and economic liberalisation. It has already transformed from a single party to a multi-party political system, and from a socialist to a market oriented economy. Extensive powers are vested in the president, who is nominated by a two-thirds majority of the People's Assembly and then elected by popular referendum for a six-year term. Since the assassination of President Muhammad Anwar el-Sadat in 1981, the office has been held by Mohammad Hosni Mubarak, who has been re-elected five times. Like Sadat, Mubarak had a distinguished former career in Egypt's armed forces. The president appoints the government and enjoys the support of the dominant National Democratic Party (NDP), which has secured a majority in

the directly elected People's Assembly. The government is reported to be facing demands for political reform from both secular and liberal opposition parties and from the officially banned fundamentalist Muslim Brotherhood. President Mubarak's crackdown on opponents has led to calls for restraint from the United States.

The Muslim Brotherhood, the strongest of the opposition groups, has spent most of its history debarred from politics because of the country's secular constitution. Elections in 2005 were marred by allegations of intimidation and ballot rigging. Israel's Ariel Center for Policy Research concluded that Cairo had no choice but to engage in a degree of reform in order to keep resentment at bay. Most international analysts and research institutions agree that Cairo would benefit from engaging in significant reform.

The threat from militant Islamic groups re-emerged after a lull from the late 1990s until 2004, when a series of bombings in the southern Sinai peninsula highlighted the exclusion of the local population from the mass tourism development of their region. Despite sympathy for the plight of the Bedouins, the attacks were unpopular amongst Egyptians, not least because of the damage to Egypt's valuable tourist industry.

The armed forces of Egypt are the largest on the African continent. The military and security-related budget is not public information but most published sources put Egyptian military expenditure at 7% to 10% of GNP. In addition to the armed forces, Egypt maintains a large paramilitary force around 350,000 strong, known as the Central Security Forces, under the Ministry of the Interior. The National Guard and border security forces come under the control of the Ministry of Defence and are reported to number 60,000 and 20,000 respectively.

Administratively, Egypt is divided into 28 governorates, each headed by a governor who is appointed by the president. Within their districts, local government units establish and manage all public utilities, provide services and designate industrial areas. Local popular councils are elected bodies that work closely with local government administrative units at various levels.

Economically, the country is in midst of shaking off a socialist past whose heritage owes as much to the bureaucratic tradition of the Byzantine empire as to any regard for workers' rights. Fiscal reforms introduced in 2005 have lowered unemployment and attracted record foreign investment. Customs—once famously corrupt and inefficient—have been streamlined. Tariffs have been cut and simplified. The Egyptian pound has been floated. In 2007, the country achieved growth of 7.1%, mostly due to $11.1 billion in foreign direct investment.

Yet the Egyptian economy, while growing, is weak. Although non-oil and gas exports increased 45% in the 2006-2007 fiscal year and were expected to rise from $14 billion in 2007 to $18 billion in 2008, total exports, at $27 billion, remain small when compared to similarly-sized countries. Turkish exports, for instance, run at over $120 billion a year. Most of Egypt's growth has been constrained to energy-intensive industries—cement, chemicals and fertilizers—that take advantage of high energy subsidies. The country continues to run a $16 billion trade deficit, importing most of its meat, wood and grain, as well as much needed capital goods equipment.

That the World Bank ranked Egypt first in a list of countries introducing investor-friendly reforms in 2007, reflected both the progress achieved and the distance left to travel. Red tape, a proliferation of regulations and regulatory agencies, bogged-down courts, and a sometimes whimsical decision-making system, makes operating in the country difficult and unpredictable. The World Bank placed Egypt 126 out of 178 countries in terms of ease of doing business. Despite the recent growth, unemployment remains high at 9%. The median age of the population is 24, compared to 39 in France, with only 43% of the employable labour force aged 16 to 64 in work, against 62% in France.

Growth in manufacturing and industry tends to be capital rather than labour intensive. Labour productivity in agriculture and services is low. Inflation is around 8% and there is widespread concern over rising income inequalities—despite improvements recorded by the UN Human Development Index over the past 30 years. According to the World Bank, one in five Egyptians can not meet their basic daily needs. Absolute poverty rose from 16.7% in 2000 to 19.6% in 2005.

Tourism provides the country with a major income stream, representing 20% of foreign currency earnings, despite the bombings in southern Sinai on the Red Sea. In 2007, Tourism Minister Zuheir Garana announced plans to boost tourist earnings by 26% to $12 billion dollars by 2011. Egypt aims to welcome some 14 million tourists in 2011, requiring a capacity of 240,000 hotel rooms, compared with 11 million in 2007. Besides catering to the mass market coming to visit the country's famed pyramids and beaches, the minister said Egypt aimed to attract private investors to develop eco-tourism and medical tourism. Niche, luxury and eco-projects—such as EQI's Siwa development—remain rare.

Siwa

The oasis of Siwa was first inhabited nearly 12,000 years ago, but only since 1986 has a road made it accessible to the rest of the world. Siwa is part of an archipelago of oases dotting the Sahara. From its origins as a Berber village, the green grass and natural spring water of the desert oasis served as an ancient stopover for caravans travelling from North Africa to the Arabian peninsula. Herodotus described it as a salt mine whose inhabitants built their homes from bricks of salt, and home to the powerful oracle of Ammon. When Alexander the Great entered Egypt in 331 B.C., he was received like a pharaoh. He rode through the blistering heat of the desert to consult the oracle. The oracle welcomed him in a spectacular procession and it is said that he blessed his mission to spread his ideas worldwide.

Located in western Egypt, not far from the border with Libya, the oasis is 80 kms long and roughly 20 kms wide, a swathe of palm and olive trees, natural springs and salt lakes surrounded by the sands of the Sahara. The abundant water is due to the presence of a large geological depression; most of the area lies around 20 metres below sea level.

In its centre, the crumbling Fortress of Shali dominates the village. Most of the local population used to live within its walls until 1926, when three days of continuous rainstorms washed the walls away, forcing the inhabitants to abandon their homes. Until recently, the fortress had not been restored. Rather, it has been ravaged by the dismantling of its buildings as residents abandoned them, taking with them doors, windows, and even supporting wooden beams and cladding as they resettled on the plains around Siwa. The remains of the fortress

continue nonetheless to serve as an example of Siwa's traditional construction techniques. The buildings were made of a mixture of salt and mud called kershef bricks, and rock salt blocks, supported by palm logs. Some of the medieval structures stood up to five storeys high. After 1926 the town was rebuilt around the fortress, but further rains in 1985 marked the general abandoning of traditional building techniques. For the reconstruction effort, mud and palm gave way to cement blocks.

The oasis is home to between 20,000 and 30,000 residents, up from 5,000 in the 1970s. The local population is divided into 11 tribes, whose sheikhs provide their people with a traditional approach to resolving disputes. The tribal judicial system is deeply respected by the inhabitants. "We are all family," says Abdallah Baghi, head of education in Siwa. Cairo is happy to keep this arrangement. The sheiks receive a government salary, and the mayor—who is a government appointee—heads the elected town council. The mayor is nominated by the provincial governor, to whom he reports. Mayors tend to be retired military officers. While the land officially belongs to the state, Cairo recognises the mosaic of historic ownership patterns administered by the tribes. Residents retain their own language, Siwi, related to the Berber dialects which span the Sahara through to Morocco. The land surrounding the villages is given over to agriculture, 300,000 date palms and 70,000 olive trees.

For much of its history, Siwa's location isolated it from mainstream history. From the fall of the Roman Empire, its independence went largely unchallenged until the 19th century. Arabian conquerors of Egypt regarded its oases as rough, impoverished desert settlements. Armies that might have made it through the desert were repelled by the central fortress or by the paucity of riches. The first European arrived in 1792 but the oasis was not brought into the fold of modern states until 1840, when the Ottomans shelled its citadel and massacred its chieftains. The first Egyptian ruler to visit Siwa was the Khedive Abbas Helmy II in the early years of the 20th century. The Khedive laid the foundations for the Great Mosque, the first public edifice built by the state. His grandson, Prince Abbas Helmy III, has returned from the UK to build himself a house in Siwa. He makes a point of praying in his grandfather's mosque.

Even then, contact with the rest of the world was limited mostly to the taxes it paid and, briefly, to the passing armies of the World Wars. It wasn't until 1977, when President Sadat took an interest in the oasis, that modernity began to intrude. As part of the Camp David accords with Israel, the Egyptian army evacuated the Sinai—which was later opened up to modern mass tourism—and was re-deployed to the western Egyptian desert, guarding the frontier with Libya. In 1983, a military cantonment was set up in Siwa, providing the villages with access to a helicopter for medical needs. Soon afterwards, the Egyptian state built the asphalt road that reached 300 kms through the desert to link the oasis with the provincial capital on the coast.

With that connection came increased attention from the state: schools, health services and a smattering of investment—enough to begin to wear away centuries of traditional culture. Motorbikes, cars, television, internet and mobile phones began rapidly widening the Siwis' horizons to the rest of the world. Along with a growth in western tourist traffic, a strong reform current of Islamic practices undermined the softer traditions of Siwan practice. The proliferation of wells lowered the water table; ironically the pumped water flooded the lakes, pulling the salt towards the surface, endangering cultivation and killing swathes of palm groves. Traditional craftsmen found that fewer students were interested in learning their art.

The older generation feared that ancient Siwi values were eroding as the young generation turned its gaze to the world beyond the oasis.

Environmental Quality International

Among the new arrivals since the road was built was EQI, which first came to Siwa with a consulting capacity in the 1980s and began investing in the region in 1996. EQI's plan was to create a suite of projects that capitalised on the oasis' resources. By nurturing and polishing those aspects of Siwa that it identified as marketable, the company would target the high-end of the value chain in global tourism. Because it would rely on the undisturbed nature of the oasis it would have to minimize its impact on the community. Materials and labour, wherever possible, would be local.

Practices would be sustainable with the aim of preserving the local culture, heritage and landscape. By valuing what was local, development would not come at the expense of traditional life. The oasis would present the world with an example of how poverty could be reduced by capitalising on local culture and safeguarding the environment. If all worked well, the road to the oasis's future would run through the riches of its past. Siwa would once again become an oracle, this time for sustainable development.

EQI's component projects, described below, attracted the attention of the International Finance Corporation, which provided $880,000 in loans and $486,000 in technical support. They comprise three hotels, a line of embroidered products and traditional jewellery, and the export of organic agriculture. The company provides direct and indirect employment to more than 600 Siwans as suppliers, staff, craftsmen and women and builders. The projects at Siwa were the consulting company's first real investment: "a foray" in the words of Neamatalla, "away from the world of advice and into the world of execution."

Adrère Amellal Oasis

EQI's Siwa centrepiece (and the only investment that did not benefit from the IFC loan) is the Adrère Amellal Oasis, a desert lodge built at the foot of a mountainous outcrop overlooking Siwa's largest lake, some distance from the main settlement. The company wanted to build a luxury lodge in the traditional style, using palm logs and blocks made from rock salt and mud. But when it began to enquire, it found that the knowledge of traditional building techniques was confined to a small group of old men. The ancient style was seen as archaic and expensive. New construction employed modern materials like concrete and cement, cooled (for those who could afford it) by air conditioning.

If EQI wanted to build in the Siwan style—and it did—the company would have to rescue a skill that was slipping away. They began with a team of three builders, with mixed results. After the first 20 rooms were built, the company discovered that the untreated palm logs they had used were infested with mites; the insects were dropping from the ceiling onto the beds, hardly acceptable in what was to be a high-end resort. Fumigation, besides being a departure from their vision, proved ineffective, so the company consulted the village elders, who provided the solution: if the logs were soaked in the salt lake for several days then baked in

the sun for several days, the mites would be gone. The method worked, but the initial roofing had to be torn off the first 20 rooms so that construction could begin afresh.

The construction was ultimately successful. Not only did it provide the lodge with the elegance and authenticity of tradition, it also revived a craft at risk of being lost. The oasis now has 150 enterprises trained in traditional building techniques. Their revival reawakened a pride in the oasis' cultural heritage. Increasingly Siwan builders choose to use palm logs and rock salt blocks instead of more modern materials, and the state governor has decreed that all new constructions are to be built in the traditional style. This has encouraged outsiders to build tourist facilities along traditional lines.

The hotel, which took eight years to build, began small with eight units, but quickly expanded through word-of-mouth publicity to 24 rooms, with a maximum occupancy of 70 guests. Priced at a range of US$ 350-450 per night, it has achieved a level of appreciation, attracting interesting travellers from all over the world and from all walks of life – including scholars, politicians, artists, fashion designers and even young students. In addition, the lodge is environmentally efficient. Kept cool during the day by the thick walls, it uses no electricity. Beeswax candles are used for lighting. Coal braziers provide heating when needed. The ceilings are made from palm and the fixtures are made from olive wood. The swimming pool is fed by natural springs. Dinner consists of organic food, mainly grown locally.

The lodge's staff is also predominantly local, providing employment and advancement to 60 members of the Siwan community. Keeping salaries at local levels are key to the lodge's financial success. Partly because it kept expensive international staff to a minimum—primarily in a consulting capacity for the kitchen—the hotel was profitable after just five years.

In 2005, the eco-lodge was ranked second by *Condé Nast Traveler* on the magazine's list of "Green Resorts". In 2007, *Travel & Leisure* listed it among its top 20 "Favorite Green Hotels". It has also received the magazine's 2006 "Global Vision" award. Most importantly perhaps, the lodge serves as the flagship for EQI's business model, proudly displaying Siwa's past and culture like roughened gemstones that, properly cut and set, provide an experience that can be found nowhere else.

Shali Lodge and Albabenshal

The company's second project, which was built concurrently, was another hotel, Shali Lodge, set in a palm grove near the village of Siwa. Built once again in the traditional mud and salt brick fashion, the hotel offers eight rooms furnished in the company's simple, plush style to travellers who may not have the budget for the luxury lodge in the desert. The hotel provides employment to 20 Siwans. The IFC loan allowed EQI to add a plan for its extension that would double that number.

Shali Lodge is a five-minute walk from the oasis' prime archaeological attraction, the Fortress of Shali, and the surrounding, largely crumbling traditional village. Albabenshal, another more recently built 11-room heritage hotel, is located at the foot of the Shali Fortress, raised from the restored ruins of derelict houses abandoned during the rains of the 1920s.

In addition to offering the company's services to a different category of traveller, both lodges provide the company with a presence in central Siwan life, and serve as reminders that EQI is not an aloof proprietor of an hotel set apart from the rest of the oasis. The company also hopes that its restoration efforts will serve as an example for Siwans looking to rebuild their old town.

Siwa Creations

In 2001, soon after EQI had built its first two lodges, the company realised that all its employees and partners were men. Siwan culture is very conservative and there is a strict separation of men and women; women refused to work in the hotels or anywhere adult males were present. Seeking to expand the company's impact, Mounir Neamatalla turned to his sister, Laila, a jewellery designer, who after some research, decided she would tap into Siwa's tradition of embroidering. Again, EQI was faced with reviving and adapting a craft that was fading from local memory. Siwan's fine stitching was unique, but few members of the younger generation knew how to do it.

Laila Neamatalla began an initiative whereby grandmothers were asked to train young women artisans in the ancient tradition, and the eco-lodge began offering local products embroidered in the traditional style to its discerning clientele. As the work flourished, she realised that quality control would be easier if she moved her workers from their homes into a workshop.

The project took off quickly. Beginning with 50 trainees funded through a grant from the British Embassy, within a year Neamatalla had 300 women stitching for her. Girls work in the workshop learning the basics of quality control until they get married, after which they continue to work from home. Traditional motifs are embroidered onto blouses, gowns, shawls, sarongs, towels, sheets and tablecloths. Necklaces are made from buttons and semi-precious stones. Embroidered leather is set in silver to make rings and bracelets. The products are sold not only in the lodge but in high-end outlets in Egypt, Italy, France and England. In 2004, the Florentine haute-couture fashion house Ermanno Scervino began incorporating Siwan embroidery into its collection. Material is sent from Florence to Cairo, shipped to Siwa, where it is stitched and sent back to be assembled in Italy.

In addition to reviving a fading art, the project has been an economic success for the Siwan artisans. Fearing that if she paid her workers too much she would upset the male-dominated economic order and trigger resentment—Laila set her initial piece rate at a level slightly less than what a man could earn in a day. Nonetheless, payment is based on production and a productive embroiderer can easily out-earn the men in her household.

Siwa Organic

The success with the women led to demand for something similar for the men, more than 70% of whom worked in agriculture. EQI responded with an effort to boost local attempts at organic production. The biggest obstacle facing the farmers, the company found, was a lack of liquidity. Farmers would finance their agricultural inputs by selling their crops before they were planted, sometimes with disastrous results: if the harvest fell short they might be forced

to sell their land to pay their debts. To hedge against these risks, Siwan farmers had begun to use chemical fertilizers to maximise their yields.

Recognising this as a problem, and using funds provided by the IFC, EQI began offering to pre-buy the crops for 40% to 50% more than the market price, provided the harvest was grown organically. The company also started a cattle financing project to supply a source of alternative fertilizer, as well as milk: it would buy cows for farmers to raise, after which the two parties would split the profits. The schemes were expected to benefit 200 to 300 farmers and preserve the region's production of organic produce.

The company also began processing and marketing the region's products with a line that included olives, dates and local produce such as olive tapenade, sycamore jam, and hibiscus syrup. This helped to add value to traditional practices and also served the global market. Siwans traditionally harvested their olives by stripping them directly from the branch, leaving the fruit scratched, bruised and unsuitable for sale in Europe. So EQI asked the farmers to begin hand-picking the olives. A local recipe for brining the olives involved much more salt than is customarily used elsewhere, the result of the mineral's abundance as well as a means to preserve supplies for lean years. EQI's recipes use a more conventional amount of salt, designed to last one season and please the international palate.

The project reflects the premium the company puts on its image. Its benefits aren't only economic and don't only accrue to the farmer – they are critical to burnishing and preserving Siwa's image as a place of tradition, purity and environmental awareness.

Challenges Going Forward

The biggest challenge EQI faces is helping the community in which it is located to balance tradition against modernity. The company has tied its brand as much to the locale in which it operates as to the enterprises it has launched. With its business model designed to introduce guests to the ancient culture and heritage, it can't afford to let the elements that make Siwa unique slip away.

With its natural heritage, its geographic remoteness and historical uniqueness, Siwa has attracted low impact tourism and a certain profile of visitor, from backpackers to jetsetters, the latter being EQI's target market. They tend to form an emotional connection with its Saharan charm and make repeated trips to the oasis.

But while the company's founders would very much like to see the oasis preserved as it has been for millennia (to offer clients "an opportunity to travel back in time"), they also recognise the impact of the modern world on local customs and mores. Motorcycles have begun to muscle out donkeys on the village roads. For villagers looking to expand their homes, modern construction is cheaper and faster to put up; only foreigners building vacation homes can be relied upon to use exclusively local materials and traditions, as the price of local expertise and materials is beyond the reach of the local population.

EQI has been very careful not to engage in practices that are unsustainable—it rejected introducing an espresso machine after it discovered that it would consume as much electricity as the rest of the lodge. But its influence is limited, not least because it is but one amongst

many outsiders operating in the oasis. Just as tourism has raised living standards, television has raised awareness of the rest of the world, and along with it people's expectations. The introduction of indoor bathrooms in many homes has put a stress on the water supply, literally the lifespring of the oasis. Protecting the way of life may mean preserving the absence of electricity and street lighting in Siwa as an asset—a chance to see the stars and connect with the universe—but there is little indication that residents agree.

Nor is it clear that Siwa's traditional lifestyle can be scaled up to handle the area's booming population. An oasis is like an island; its natural resources are limited. There are only so many palm trees that can be cut for roofing—importing them from outside is forbidden for fear of introducing new pests. A debate is raging about the sustainability of Siwa's water resources. Even before the introduction of bathrooms, the water table was dropping; the growing number of farmers had simply dug too many wells. Four plants have been built to bottle the oasis' mineral water (some operated by the Egyptian armed forces) and sell it nationwide.

"Siwa is now literally at a crossroads," says Neamatalla. "It can evolve to become just another village, where the measures of progress are strictly financial, very much related to whether you have paved streets, sidewalks and the like. Or Siwa can literally be nourished by its past, nourished by its unique nature."

EQI helped to put the oasis on the tourism map and others are beginning to connect the dots. There has been a proliferation of hotels and restaurants in the last year. Children have started running after tourists, begging for pens, candy or money. The oasis has a small landing strip, allowing those who can hire a plane to land, and there is talk of expanding it into a full-scale airport to facilitate the introduction of package tours. Egyptian businessmen talk of building 400-room hotels catering to the mass market.

With only 600 families, in a community of 23,000, working with or for the company, EQI doesn't have the leverage to decide the path the oasis will take. EQI may be able to restructure a hotel or two in the old town, but only the state can choose whether to set up a system of incentives to ensure the rest of Siwa develops along those lines. Government policy is set largely in the Matrouh provincial capital, 300 kms away, where the tourism perspective is focused less on sustainability than on volume. In the battle between tradition and modernity on which the future of the company's business model depends, EQI's needs allies. Organising them to help shape Siwa's future is a further challenge.

Questions:

1. What are the key components of EQI's business model as applied to Siwa?

2. Evaluate the impact of EQI's activities on Siwa.

3. What are the local, national and global forces driving change in Siwa?

4. Going forward, what advice would you give Mounir Neamatalla?

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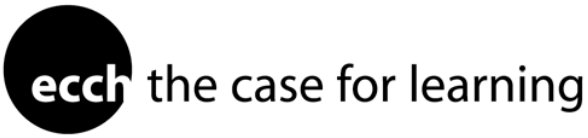

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9B08M002

BRITISH PETROLEUM (PLC) AND JOHN BROWNE: A CULTURE OF RISK BEYOND PETROLEUM (A)[1]

Trevor Hunter wrote this case under the supervision of Professor Murray Bryant solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.

 Version: (A)2008-04-23

In April 2007, the board of British Petroleum (BP) faced a difficult decision. A month earlier, two independent reports (the first commissioned by BP and chaired by former American Secretary of State James Baker; the second commissioned by the U.S. Chemical Safety and Hazard Investigation Board) were released investigating an explosion in 2005 at a refinery in Texas City in the United States that killed 15 people and injured more than 180. After exhaustive investigations, the reports identified a history of poorly regulated safety measures in the plant and risk management, the blame for which seemed to focus on the firm's group chief executive, Lord John Browne.

After the Baker report was released, the company attempted to mitigate the damage in its 2006 annual review:

> Importantly, the panel did not conclude that BP intentionally withheld resources on any safety-related assets or projects for budgetary or cost reasons. The panel interviewed hundreds of employees in the course of its work and observed that it had seen no information to suggest that anyone – from BP's board members to its hourly paid workers – acted in anything other than good faith.[2]

In fact, there had been other independent reports, one in 2004 and then again three months after the 2007 Baker report, that were less forgiving of BP's "culture of safety." The 2007 report from the U.S. Chemical Safety and Hazard Investigation Board suggested that safety in the company's facilities had been compromised in favour of profits, cost savings or lack of management supervision.

[1] *This case has been written on the basis of published sources only. Consequently, the interpretation and perspectives presented in this case are not necessarily those of British Petroleum or any of its employees.*
[2] *Group Executive's Letter to Shareholders, BP Annual Review 2006.*

> The Texas City disaster was caused by organizational and safety deficiencies at all levels of the BP Corporation. Warning signs of a possible disaster were present for several years, but company officials did not intervene effectively to prevent it.[3]

These reports were just the most recent of many concerns hurting the reputation and performance of the world's second-largest super major oil company and leading to a drop in share price from US$70.41 on January 17, 2006, to US$63.28 on January 16, 2007.[4] As well, the public release of this information had destroyed nearly US$39 billion of market capitalization since August 2006.[5] (Exhibit 1 presents a comparison of the stock performance of the world's super-major oil companies). During this period, the price of crude oil had risen nearly 20 per cent.[6]

In January 12, 2007, Browne announced that he would retire from BP. This was somewhat of a shock to the board and the investment community because his retirement date was roughly 18 months before his mandatory retirement date[7], and, in the past, he had campaigned to remain in his post past the retirement date. Others were concerned that his successor may not yet be fully prepared to step into the top job. What was also a shock was the announcement of the over US$50 million severance package Browne was set to receive upon retiring. Many wondered how the board could award him such a large package after such poor performance over recent years.

Browne had been credited with saving and taking BP to new heights and was one of the most respected business leaders in the United Kingdom. At the same time, however, it was clear that in recent months the firm's performance had suffered significantly. More and more evidence pointed to systemic problems within BP that had been allowed to grow during his tenure, creating the culture of risk in which the BP board now found itself reducing shareholder confidence and risking lives and the firm's reputation. It was up to the board to decide what to do next.

BRITISH PETROLEUM

British Petroleum plc, (BP) was founded in 1908 as the Anglo-Persian Oil Company and was started with a single well in a remote area of Persia after nearly eight years of searching. From this humble beginning, in less than half a century, the firm grew to be the largest in the United Kingdom and one of the largest in the world, employing over 100,000 people in over 100 countries.[8] (Exhibit 2 presents selected financial information for the year ending 2006, and Exhibit 3 presents the biographies of the BP board, as published in the 2006 Annual Report.)

The petroleum industry, while lucrative due to insatiable global demand, was also one that involved enormous risks. The days of cheap, easily accessed oil appeared to be over and what remained was often located in areas that were politically and socially unstable. Huge amounts of capital were required to find oil, refine it and then deliver it to the many end users. Risk also stemmed from the fact that although the timing was up for debate, no one doubted that, eventually, either through the development of new technology to replace petroleum or through a simple lack of product, a company that was focused only on

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[3] *U.S. Chemical Safety and Hazard Investigation Board: Investigation Report, Report No. 2005-04-I-TX, Refinery Explosion and Fire, March 20, 2007, p. 18.*
[4] *Yahoo Finance interactive stock charts.*
[5] *Heather Timmons, "BP Chief Will Retire Ahead of Schedule," International Herald Tribune, January 12, 2007.*
[6] *http://www.opec.org/home/basket.aspx, accessed December, 2007.*
[7] *BP required its senior managers to retire upon reaching the age 60.*
[8] *BP Corporate website: http://www.bp.com/sectiongenericarticle.do?categoryId=14&contentId=2002063, accessed September 2007.*

oil would go out of business. To that end, BP tried to protect itself by attempting to stave off the loss of product by spending billions on exploration for new reserves and on the downstream technology of refining and distribution to control the entire value chain. At the same time, BP also tried to diversify into new energy generation technologies.

BP's business was divided into three segments[9]: oil exploration and production; oil refining and marketing; and gas, power and renewables.

Oil Exploration and Production

In 2007, BP was actively exploring for oil in 26 countries around the world, which over the years had provided the firm with proven reserves of 18.5 billion barrels of oil and gas equivalents leading to daily production of roughly four million barrels per day. BP had plans to start 24 more major projects by 2009, which would provide additional reserves of over 3.7 billion barrels with an additional production of 850,000 barrels per day.

Oil Refining and Marketing

Oil refining and marketing took the crude oil BP pumped from the ground and turned it into various products like gasoline, kerosene and motor oil, products which were then sold to consumers either through the firm's own distribution network of over 25,000 gas stations or to other sellers. Oil refining was a technically complex and highly capital-intensive activity. In 2006, BP owned outright or was part owner of 18 refineries processing the equivalent of 2.8 million barrels a day.

Petroleum could also be refined into chemicals known as acetyls that were used in numerous consumer products. A statement from the firm indicated the acetyls' pervasiveness:

> Our acetic acid can be found in jars of pickles. Our acetyls feedstock is used to make Viagra. We invented the purified teraphthalate acid (PTA), used in both clothes and polyethylene terephthalate (PET) bottles for water and soft drinks (and we recycle many of those bottles into fleece pullovers). We are proud to have a world-class PTA business. We also make paraxylene (PX), the raw material for PTA.[10]

Gas, Power and Renewables

As one of the leading oil producers for most of the 20th century, BP, in more recent years, had attempted to reposition itself. The slogan "BP: Beyond petroleum" had been coined to present BP as a company that was preparing for a world that was past its dependence on petroleum. In 2005, BP Alternative Energy was launched to consolidate the company's low-carbon energy initiatives. By 2006, BP claimed to be a world leader in power generation from solar, wind and gas-fired power plants, with plans for additional investment and research into hydrogen power generation.

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[9] *Information for this section comes from the "About Us" section of the BP corporate website, accessed September 2007.*
[10] *http://www.bp.com/sectiongenericarticle.do?categoryId=9008810&contentId=7016413, accessed September 2007.*

JOHN BROWNE

John Browne, The Lord Browne of Madingley, became chief executive officer of BP in 1995 at the age of 45. He was knighted in 1998 and was made a life peer in the British House of Lords in 2001. By all accounts, Browne was one of the most successful CEOs in the firm's history, credited with turning BP into one of the largest and most successful energy companies in the world. Browne became known for his willingness to take risks and to pursue big deals and, under his leadership, in 1998, the acquisition of American oil company Amoco was engineered. The deal was worth more than US$60 billion, an amount that literally doubled the firm's sales and reserves. In 2003, BP created a joint venture with Russian oil giant Yukos, providing the firm with 50 per cent access to reserves of over 44 billion barrels of oil or oil equivalent and additional production of about 1.2 million barrels a day, at a cost of US$6.8 billion and the associated risk of operating in the Russian business environment.[11]

By many accounts, Browne was a well-respected business person who, while being one of the most powerful business executives in the United Kingdom, was also very private; little was known about his personal life. He was reputed to be a close friend of then British Prime Minister Tony Blair.

Along with turning the firm around, Browne was credited with setting the vision for BP as one that would focus on life beyond petroleum. That slogan meant more than merely *planning* to become an energy company rather than a petroleum company; it meant BP was a firm that cared about the environment and the safety of its employees more than it cared about oil and profits. Blair had appointed him to the U.K.'s Sustainable Development Commission. The commission described itself as:

> The Government's independent watchdog on sustainable development, reporting to the Prime Minister, the First Ministers of Scotland and Wales and the First Minister and Deputy First Minister of Northern Ireland. Through advocacy, advice and appraisal, we help put sustainable development at the heart of Government policy.[12]

The firm took great pains to provide evidence of its focus on the environment and safety in numerous reports and websites, and it undertook investments and made contributions to environmental groups. Codes of conduct for employees covering numerous activities — including safety and the environment, policies on corporate governance and statements about social responsibility — were all crafted under Browne's watch. The webpage on the BP corporate website entitled "Responsible Operations" had links to topics like "Health and Safety," "Management and Compliance," "Environment," "Compliance and Ethics" and "Our People."

A CULTURE OF RISK: THE TEXAS CITY REFINERY EXPLOSION

Having been involved in the process of refining crude oil for over 70 years, the Texas City Oil Refinery, the third largest refinery in the United States, had long since paid for its initial investment. The facility came to be a BP asset with the 1999 acquisition of Amoco, and although the explosion on March 23, 2005, which killed 15 people and injured more than 180, was the worst in company history, it was by no means the first accident at the facility.

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[11] TNK-BP joint venture announcement webcast, accessed from BP website: http://www.bp.com/sectiongenericarticle.do?categoryId=2010203&contentId=2014547, accessed September 2007.

[12] The Sustainable Development Commission website: http://www.sd-commission.org.uk/pages/aboutus.html – accessed September 2007.

Described as "being held together by little more than Band-Aids and superglue" by Don Parus, the refinery's director,[13] there had been 23 fatalities in the previous 30 years. Since 2002, when Parus took over operations at the plant, there had also been an average of one fire a week, ranging from 50 to 80 a year.[14] Parus is quoted as wondering why his staff actually came to work: "killing somebody every 18 months seems to be acceptable at this site . . . why would people take the risk, based on the risk of not going home?"[15]

In 2004, an independent Texas consulting firm called Telos Group was contracted by the Texas City refinery director to assess the safety culture of the plant. In its report, Telos exposed numerous pieces of evidence to suggest that safety at the refinery was being compromised as repairs or servicing were not effectively completed in attempts to save money or when workers simply were unable to follow the safety procedures. A report in the Financial Times mentions "broken alarms, thinned pipe, chunks of concrete falling, bolts dropping 60 feet, and staff being overcome with fumes"[16] as well as "numerous workers at the plant complaining of pressure not to report injuries and safety violations."[17]

The Telos report suggested that although there seemed to be a willingness on the part of the refinery's management team to maintain a safe working environment, desire and reality may have been two different things. Exhibit 4 provides excerpts from the Telos Report. The consultants concluded that there seemed to be an ingrained culture of risk at the refinery, which would require a great deal of effort to change, and that, in the past, after an accident, efforts to make changes started out strong but faded as management's attention drifted back to profits and efficiency.

> Many still too easily see a future where it all slides back to 'the way it was before the incidents,' and so people 'pray and hope that this will not pass' . . . we were told many stories about times that left the distinct impression that margins could beat out safety as long as they were good enough . . . 'here we are today and they still haven't kept promises that make our people out there feel safe'. . . 'Soon becomes never around here' mentioned one person in the refinery, pointing to successive postponements; starting with fixing it 'soon (meanwhile we put a clamp on it), which then becomes next week, which becomes next month, which becomes next turnaround, which becomes never.'[18]

In apparent support of this statement, a few months after the March 2005 explosion, there were two additional explosions causing over US$ 32 million in property damage, and then, in 2006, another worker was killed on the job.

The 2007 U.S. Chemical Safety and Hazard Investigation Board (CSHIB) report, which examined the explosion and BP's safety culture in general, revealed that after the 1999 acquisition of Amoco, rather than making much-needed safety improvements, BP ordered a 25 per cent cut in fixed costs at all its refineries. The report went on to condemn the firm by suggesting:

> The combination of cost-cutting, production pressures and failure to invest caused a progressive deterioration of safety at the refinery. Beginning in 2002, BP commissioned a series of audits and studies that revealed serious safety problems at the Texas City refinery, including a lack of necessary preventative maintenance and training. These

[13] *Andrew Clark and Terry Macalister, Guardian News and Media Limited, December 8, 2006.*
[14] *Ibid.*
[15] *Ibid.*
[16] *Sheila McNulty, "Faults at BP led to one of the worst US industrial disasters," Financial Times, December 18, 2006.*
[17] *Ibid.*
[18] *Telos Perspective and Recommendations, The Telos Group, 2004, p. 10.*

> audits and studies were shared with BP executives in London and were provided to at least one member of the executive board. BP's response was too little and too late. Some additional investments were made, but they did not address the core problems in Texas City. In 2004, BP executives challenged their refineries to cut yet another 25 per cent from their budgets for the following year.[19]

These comments echoed the findings of the Baker report. This report, which BP had stated was very supportive of their safety culture, could be interpreted differently than BP's own interpretation. Exhibit 5 presents excerpts from the report's Executive Summary entitled "Corporate Safety Culture." Clearly there were differences of opinion between the firm and the independent observers with respect to the depth of BP's culture of safety. Despite the difference of opinion, since the explosion, BP had paid out about US$2 billion in terms of compensation payouts and lawsuits.[20]

CONCLUSION

With Browne's impending resignation, there was undeniable evidence of big problems throughout the organization with regard to safety and the firm's reputation. As a result, BP's lack of public credibility affected the already-stated strategy and goals of the firm. The board knew that changes needed to take place from the top down. The obvious question: Where to begin?

[19] *U.S. Chemical Safety and Hazard Investigation Board Press Release, March 20, 2007.*
[20] *Porretto, washingtonpost.com, Jan. 16, 2007.*

Exhibit 1

SUPER MAJOR OIL COMPANY'S STOCK PERFORMANCE COMPARISON – 1 YEAR RETURN

Source: Bloomberg, accessed January 23, 2008

Exhibit 2

GROUP INCOME STATEMENT – 2006
For the year ended 31 December ($ million)

	2006	2005	2004
Sales and other operating revenues	265,906	239,792	192,024
Earnings from jointly controlled entities - after interest and tax	3,553	3,083	1,818
Earnings from associates - after interest and tax	442	460	462
Interest and other revenue	701	613	615
Total revenues	270,602	243,948	194,919
Gains on sale of businesses and fixed assets	3,714	1,538	1,685
Total revenues and other income	274,316	245,486	196,604
Purchases	187,183	163,026	128,055
Production and manufacturing expenses	23,793	21,092	17,330
Production and similar taxes	3,621	3,010	2,149
Depreciation, depletion and amortization	9,128	8,771	8,529
Impairment and loses on sale of businesses and fixed assets	549	468	1,390
Exploration expenses	1,045	684	637
Distribution and administration expenses	14,447	13,706	12,768
Fair value (gain) loss on embedded derivatives	-608	2,047	--
Profit before interest and taxation from continuing operations	35,158	32,682	25,746
Finance costs	718	616	440
Other finance (income) costs	-202	145	340
Profit before taxation from continuing operations	34,642	31,921	24,966
Taxation	12,331	9,473	7,082
Profit from continuing operations	22,311	22,448	17,884
Profit (loss) from Innovene operations	-25	184	-622
Profit for the year	22,286	22,632	17,262
Attributable to			
BP shareholders	22,000	22,341	17,075
Minority interests	286	291	187
	22,286	22,632	17,262
Earnings per share - cents			
Profit for the year attributable to BP shareholders			
Basic	109.84	105.74	78.24
Diluted	109	104.52	76.87

Source: BP Annual Review 2006

Exhibit 3

BP BOARD OF DIRECTORS PRIOR AT THE PUBLICATION OF THE 2006 ANNUAL REVIEW

1. The Lord Browne of Madingley, FRS, FREng
Group Chief Executive
John Browne (59) joined BP in 1966 and subsequently held a variety of exploration and production and finance posts in the US, UK and Canada. He was appointed an executive director in 1991 and group chief executive in 1995. He will retire as group chief executive at the end of July 2007. He is a non-executive director of Goldman Sachs Group Inc. He was knighted in 1998 and made a life peer in 2001.

2. Dr A B Hayward
Group Chief Executive designate
Tony Hayward (49) joined BP in 1982. He held a series of roles in exploration and production, becoming a director of exploration and production in 1997. In 2000, he was made group treasurer, and an executive vice president in 2002. He was chief executive officer of exploration and production between 2002 and 1 February 2007, becoming an executive director in 2003. He has been appointed to succeed Lord Browne as group chief executive following Lord Browne's retirement in July. Dr Hayward is a non-executive director of Corus Group plc.

3. Dr D C Allen
Group Chief of Staff
David Allen (52) joined BP in 1978 and subsequently undertook a number of corporate and exploration and production roles in London and New York. He moved to BP's corporate planning function in 1986, becoming group vice president in 1999. He was appointed executive vice president and group chief of staff in 2000 and an executive director of BP in 2003. He is a director of BP Pension Trustees Limited.

4. I C Conn
Group Executive Officer, Strategic Resources
Iain Conn (44) joined BP in 1986. Following a variety of roles in oil trading, commercial refining, retail and commercial marketing operations, and exploration and production, in 2000 he became group vice president of BP's refining and marketing business. From 2002 to 2004, he was chief executive of petrochemicals. He was appointed group executive officer with a range of regional and functional responsibilities and an executive director in 2004. He is a non-executive director of Rolls-Royce Group plc.

5. Dr B E Grote
Chief Financial Officer
Byron Grote (58) joined BP in 1987 following the acquisition of The Standard Oil Company of Ohio, where he had worked since 1979. He became group treasurer in 1992 and in 1994 regional chief executive in Latin America. In 1999, he was appointed an executive vice president of exploration and production, and chief executive of chemicals in 2000. He was appointed an executive director of BP in 2000 and chief financial officer in 2002. He is a non-executive director of Unilever NV and Unilever PLC.

6. A G Inglis
Chief Executive, Exploration and Production
Andy Inglis (47) joined BP in 1980, working on various North Sea projects. Following a series of commercial roles in exploration, in 1996 he became chief of staff, exploration and production. From 1997 until 1999, he was responsible for leading BP's activities in the deepwater Gulf of Mexico. In 1999, he was appointed vice president of BP's US western gas business unit. In 2004, he became executive vice president and deputy chief executive of exploration and production. He was appointed chief executive of BP's exploration and production business and an executive director on 1 February 2007.

Exhibit 3 (continued)

7. J A Manzoni
Chief Executive, Refining and Marketing
John Manzoni (47) joined BP in 1983. He became group vice president for European marketing in 1999 and BP regional president for the eastern US in 2000. In 2001, he became an executive vice president and chief executive for gas and power. He was appointed chief executive of refining and marketing in 2002 and an executive director of BP in 2003. He is a non-executive director of SABMiller plc.

8. P D Sutherland
KCMG Chairman
Peter Sutherland (60) rejoined BP's board in 1995, having been a non-executive director from 1990 to 1993, and was appointed chairman in 1997. He is non-executive chairman of Goldman Sachs International and a non-executive director of Investor AB and The Royal Bank of Scotland Group.
Chairman of the chairman's and the nomination committees

9. Sir Ian Prosser
Deputy Chairman
Sir Ian (63) joined BP's board in 1997 and was appointed non-executive deputy chairman in 1999. He is the senior non-executive director. He retired as chairman of InterContinental Hotels Group PLC, previously Bass PLC, in 2003. He is the senior independent non-executive director of GlaxoSmithKline plc and a non-executive director of the Sara Lee Corporation. He was previously on the boards of The Boots Company PLC and Lloyds TSB PLC.
Member of the chairman's, the nomination and the remuneration committees and chairman of the audit committee

10. J H Bryan
John Bryan (70) joined BP's board in 1998, having previously been a director of Amoco. He serves on the boards of General Motors Corporation and Goldman Sachs Group Inc. He retired as the chairman of Sara Lee Corporation in 2001. He is chairman of Millennium Park Inc. in Chicago.
Member of the chairman's, the audit and the remuneration committees

11. A Burgmans
Antony Burgmans (60) joined BP's board in 2004. He was appointed to the board of Unilever in 1991. In 1999, he became chairman of Unilever NV and vice chairman of Unilever PLC. He was appointed chairman of Unilever NV and Unilever PLC in 2005. He is also a member of the supervisory board of Akzo Nobel NV.
Member of the chairman's and the safety, ethics and environment assurance committees

12. Sir William Castell, LVO
Sir William (59) joined BP's board in July 2006. From 1990 to 2004, he was chief executive of Amersham plc and subsequently president and chief executive officer of GE Healthcare. He was appointed as a vice chairman of the board of GE in 2004, stepping down from this post in 2006 when he became chairman of the Wellcome Trust. He remains a non-executive director of GE and is a trustee of London's Natural History Museum.
Member of the chairman's, the audit and the safety, ethics and environment assurance committees

13. 13 E B Davis, Jr
Erroll B Davis, Jr (62) joined BP's board in 1998, having previously been a director of Amoco. He was chairman and chief executive officer of Alliant Energy, relinquishing this dual appointment in 2005. He continued as chairman of Alliant Energy until February 2006, leaving to become chancellor of the University System of Georgia. He is a non-executive director of PPG Industries, Union Pacific Corporation and the US Olympic Committee.
Member of the chairman's, the audit and the remuneration committees

Exhibit 3 (continued)

14. D J Flint, CBE
Douglas Flint (51) joined BP's board in 2005. He trained as a chartered accountant and became a partner at KPMG in 1988. In 1995, he was appointed group finance director of HSBC Holdings plc. He was chairman of the Financial Reporting Council's review of the Turnbull Guidance on Internal Control. Between 2001 and 2004, he served on the Accounting Standards Board and the Standards Advisory Council of the International Accounting Standards Board. Member of the chairman's and the audit committees

15. Dr D S Julius, CBE
DeAnne Julius (57) joined BP's board in 2001. She began her career as a project economist with the World Bank in Washington. From 1986 until 1997, she held a succession of posts, including chief economist at British Airways and Royal Dutch Shell Group. From 1997 to 2001, she was an independent member of the Monetary Policy Committee of the Bank of England. She is chairman of the Royal Institute of International Affairs and a non-executive director of Lloyds TSB Group PLC, Roche Holdings SA and Serco Group plc.
Member of the chairman's and the nomination committees and chairman of the remuneration committee

16. Sir Tom McKillop
Sir Tom (63) joined BP's board in 2004. Sir Tom was chief executive of AstraZeneca PLC from the merger of Astra AB and Zeneca Group PLC in 1999 until December 2005. He was a non-executive director of Lloyds TSB Group PLC until 2004 and is chairman of the Royal Bank of Scotland Group.
Member of the chairman's, the remuneration and the safety, ethics and environment assurance committees

17. Dr W E Massey
Walter Massey (68) joined BP's board in 1998, having previously been a director of Amoco. He is president of Morehouse College, a non-executive director of Bank of America and McDonald's Corporation and a member of President Bush's Council of Advisors on Science and Technology.
Member of the chairman's and the nomination committees and chairman of the safety, ethics and environment assurance committee

Changes to the board
Michael Wilson resigned as a director on 28 February 2006 and Michael Miles retired as a director on 20 April 2006. Sir William Castell was appointed a non-executive director on 20 July 2006 and Andy Inglis was appointed an executive director on 1 February 2007.

Source: BP Annual Review 2006.

Exhibit 4

EXCERPTS FROM THE TELOS REPORT, 2004

Don Parus is mentioned by the overwhelming majority of those interviewed and surveyed as genuine in his commitment to people and safety, while oftentimes, in the same breath, they question if everyone on the leadership team is on board with Don.

The lack of leadership and management visibility, ("except when something goes wrong") communication, and conversation around protection coupled with site history and a natural focus on production causes a significant priority for production over protection at Texas City.

Maintenance underinvestment over the years has significantly altered the listening for management's safety commitment and diminishes production's relationship to safe practices for routing assignments (thinning pipe, inconsistent asbestos abatement practices, corrosion under insulation). In addition, when asked what area concerned people the most in terms of safety performance — or where the next injury was likely to occur — turnaround maintenance was at the top of the list. Many added that this was likely due to the requirement of clustering them all together and thus not being able to select contractors by their safety performance.

Few levels of the organization are exempt from the "scarcity of time" syndrome that tends to reinforce a culture of acting on priorities versus a culture of acting from values and strategies. From a protection perspective, the quantity and competence of managers and supervisors is questionable given the cultural work needed at Texas City. The prevalent view of procedures as "unworkable" at the production level contributes to the culture of individual interpretation of protection requirements and tolerance for variation from accepted safe practices. Many, many people pointed out to us that in several cases they knew personally, these were good people who could not make sense of the procedure as written, and were trying to the best of their ability to understand the ***intent*** of the procedure and comply with that.

Source: Telos Perspective and Recommendations, The Telos Group, 2004.

Exhibit 5

EXCERPTS FROM THE BAKER REPORT

Process safety leadership. The Panel believes that leadership from the top of the company, starting with the Board and going down, is essential. In the Panel's opinion, it is imperative that BP's leadership set the process safety "tone at the top" of the organization and establish appropriate expectations regarding process safety performance. Based on its review, the Panel believes that BP has not provided effective process safety leadership and has not adequately established process safety as a core value across all its five U.S. refineries. While BP has an aspirational goal of "no accidents, no harm to people," BP has not provided effective leadership in making certain its management and U.S. refining workforce understand what is expected of them regarding process safety performance. BP has emphasized personal safety in recent years and has achieved significant improvement in personal safety performance, but BP did not emphasize process safety. BP mistakenly interpreted improving personal injury rates as an indication of acceptable process safety performance at its U.S. refineries. BP's reliance on this data, combined with an inadequate process safety understanding, created a false sense of confidence that BP was properly addressing process safety risks.

Incorporation of process safety into management decision-making. The Panel also found that BP did not effectively incorporate process safety into management decision-making. BP tended to have a short-term focus, and its decentralized management system and entrepreneurial culture have delegated substantial discretion to U.S. refinery plant managers without clearly defining process safety expectations, responsibilities, or accountabilities. In addition, while accountability is a core concept in BP's Management Framework for driving desired conduct, BP has not demonstrated that it has effectively held executive management and refining line managers and supervisors, both at the corporate level and at the refinery level, accountable for process safety performance at its five U.S. refineries. It appears to the Panel that BP now recognizes the need to provide clearer process safety expectations.

Process safety cultures at BP's U.S. refineries. BP has not instilled a common, unifying process safety culture among its U.S. refineries. Each refinery has its own separate and distinct process safety culture. While some refineries are far more effective than others in promoting process safety, significant process safety culture issues exist at all five U.S. refineries, not just Texas City. Although the five refineries do not share a unified process safety culture, each exhibits some similar weaknesses. The Panel found instances of a lack of operating discipline, toleration of serious deviations from safe operating practices, and apparent complacency toward serious process safety risks at each refinery.

Source: The Report of the BP U.S. Refineries Independent Safety Review Panel, 2007.

INSEAD

The PCNet Project (B)

Dynamically Managing Residual Risk

04/2005-5272

This case was written by Christoph H. Loch, Professor of Technology and Operations Management at INSEAD. It is based on real events, but the names of all companies and participants have been disguised. Any similarity with existing companies is accidental. The case is intended to be used as a basis for class discussion rather than to illustrate the effective or ineffective handling of an administrative situation.

The unexpected events that worried Jack Muller represented "residual risk". In a project of such complexity, no amount of planning can ever anticipate all events, no matter how thorough; there will always be some events that are not planned for. Therefore, it is key to build the capability of dealing with residual risk as it comes along.

The direct outcome of the 18 September meeting was a strengthening of the aggregate oversight body (for the entire merger), not in the sense of it exerting more pressure, but in terms of adding experience and enhancing its problem-solving and advice-giving capacity. First, the Integration Management Committee Meeting became the Performance Monitoring Meeting, with a dedicated manager (who followed up issues), expanded membership to add relevant areas of expertise, and a more systematic synergy follow up.

The Risk Management Office

At the level of the IT integration, Max Schmeling had already begun to build a structure for *managing residual, unforeseen contingencies during execution*. The Risk Management Office (RMO) was put in place as a complement to the Project Management Office (PMO). Whereas the PMO followed up on actions and on reporting, the RMO focused on responding to deviations. It was a central control point to which all teams were required to call in at least once a day to report on progress and problems that arose.

The RMO achieved two things. First, it represented a *problem-solving resource* – Metal Resources Co. had its own technical experts present in this center, plus experts on call from all technical areas at the main systems vendors (such as HP and IBM for PCs, Cisco for routers, Microsoft for operating systems, SAP for R3, EDS for the network operation, etc), and experts in culture and change management were also on call. Thus, when an unforeseen problem occurred, the center diagnosed it with the team in question and then helped to mobilize the expertise to bring about, or plan, a solution as quickly as possible. Second, the rapid information exchange helped to set off *alarm bells (early warnings) as well as solution approaches*, across the many parallel teams. As they were working on very similar issues at multiple sites, a problem occurring at one site might well subsequently occur at one of the others, and thus the transfer of solutions was efficient. The rapid communication of relevant warnings from one team to another was dubbed "the hotwire".

Thus, at each local deployment, a representative of the *next* local deployment team (in another state or country) was present so that they could become familiar with the logistical as well as technical issues. The Latin American deployment went very smoothly as a result of this approach. Similarly, problems that arose in the application migration to the new platform in Singapore were subsequently avoided throughout the Southeast Asian region.

Both the PMO and the RMO also attempted to prevent certain risks by enforcing strict standards (thus reducing the complexity and number of things that could go wrong), such as all of North America having to move to a single SAP system configuration (there was a separate central control center for that project alone, which worked with all the organizational units to produce a common standard that satisfied most of the needs). Many technical and business software applications were standardized (such as statistical analysis packages,

geological expert systems etc.), which, in turn, reduced the number of different problems that could occur and facilitated the sharing of solutions across teams.

The activities of the RMO enabled the organization to work with budget and schedule variances (deviations) in a more sophisticated way, for example, by performing variance analysis. There was significant overspending in Phase 3, because some work originally foreseen for Phase 4 was in fact carried out at this point due to small "design changes" or improvements in protocols and processes as the organization learned during the project. The activities of the RMO involved providing explanations and documentation for residual risk and the respective actions required. Thus the organization had a 'trace' that offered a thorough explanation of deviations and an institutionalized effort to learn from such changes.

The following example illustrates the effect of such learning: the early PC deployments took several man days per person as the migration team was learning and stabilizing the components of the network, whereas later deployments required only a few hours (a reduction of 75%) and were much more stable. Overall, the project remained slightly under budget, although it took 6 months longer than originally planned.

Dealing With Individual Residual Risks

The problem of lost e-mails and corrupted e-mail capabilities had to be attacked at two levels. The first level was technical: when the lost file incidents were examined, the root problem turned out to be that Microsoft XP did not have a translator to automatically modify files. In response, the Microsoft developers made their own in-house translator software available which systematically eliminated the problems and improved the overall robustness of the network. Several similar fixes contributed to overall network stabilization. The second solution level concerned change management processes: over time, the merger team put such processes in place ("who can change what system features, after discussing it with whom"), and convinced employees to comply with them, which eliminated incompatibilities introduced by local changes.

The Sri Lankan government partner eventually came on board, although at its own pace. This contributed to a six-month delay but did not "stop the show".

The refining manager who refused the deployment was won over with a combination of carrot and stick. On the one hand, the IT organization conducted a security audit at his site, which exposed serious vulnerability to external attacks and other breakdowns. This allowed the team to show him how badly it might get for him locally (carrot) and make it clear that he could not be permitted to pose a risk for the rest of the organization (stick).

The cajoling and convincing of the refining plant manager was then generalized to a standardized, prepared, compelling argument that was used with operating managers who thought they had no time for off-line activities like IT migration (Exhibit 1). The argument again combined carrot and stick – on the one hand it explained the benefits to the operating units themselves and emphasized that they could get help; on the other it threatened them that their network would no longer be supported if they did not migrate. This standard argument was, of course, complemented by personal visits and face-to-face explanations.

Overall Project Success

> *"You guys will have to learn how to walk, whistle and chew gum, all at the same time."*
>
> Martin Folz, CEO

The ITC organization did learn to "walk, whistle and chew gum at the same time", as the CEO demanded. They took the metaphor seriously enough to define it: walking meant to not disrupt ongoing operations, whistling to lead the project with state-of-the-art methods, and chewing gum stood for status reviews and dealing with residual risks. At the end, no unexpected event was serious enough to break the project. The thorough planning, combined with the flexibility of the RMO and the hotwire, was so powerful that the huge IT merger became a convincing success. The total IT merger project beat its target by $20 million, producing $230 million of synergies in the first year, and the PCNet project made a significant contribution to this overfulfillment (partially driven by an extra $10 million in PC discounts that came out of the proactive negotiations).

Critical to this success was the support and constancy of purpose of top management: the CEO listened to the business case and stayed the course. No IT migration budgets were cut, in spite of the lean economic times, and the project was able to maintain priority and focus.

Exhibit 1

Communication Document for Operating Company Compliance

The PCNet Deployment Consultant team presents……..

The Top Ten List of **"Reasons why you should quickly and carefully decommission your legacy IT environment"**

10. Dual environments will make it more difficult to maintain IP compliance, particularly once Microsoft ceases support of NT 4.0.
9. Dual environments are impacting our networks due to unnecessary traffic from the legacy infrastructures such as file replication, Exchange Global Catalog replication, SMS inventory and package traffic, as well as WINS and DNS traffic.
8. Increased vulnerability to security attacks and viruses as vendors start dropping maintenance support for Win9x, NT4 and W2K, and our internal centralized efforts are no longer funded for these environments.
7. Increased cost for support as troubleshooting by support staff becomes a lot more complex due to having to follow separate processes and using different tools in order to support two environments. Cost also increases due to reduced reliability and increased break/fix calls as hardware has lived long past its planned life-cycle.
6. Legacy Master Account NT4 and AD domains will be decommissioned, leaving resource domains with no trusts. The old PC and workstation environments will lose connectivity. There will also be performance issues as Master Account domain controllers are removed one by one.
5. The decommissioning effort is part of Metal Resources and RBD synergy cost-savings and the realization of these savings now becomes our responsibility.
4. The business case for the synergies will be compromised by having to support dual infrastructures.
3. Manpower can be redirected towards strategic projects once deployment and decommissioning efforts are completed (and we can take our vacations now!).
2. Old computing standards monthly costs will be increased by x2, x4 and x6 the longer you keep your old hardware. Costs to maintain old infrastructure will be divided by the number of remaining old standard users.

And the #1 Reason is …

1. The old desktop **has** been declared "non-standard". Yes, it is true. The sun has set on the old standard, with the IT design team only providing Anti-Virus updates and major security patches.

Having old standard machines at your site makes your site "Non-Standard".

Here are three documents to help you in your efforts to decommission:

Decommission Legacy Systems Guide
Decommissioning Server Assets
Decommissioning Workstation Assets

******* If the thought of pulling the plug on your favorite Compaq Proliant server is giving you nightmares and sleepless nights, then please email me back about getting the PCNet Deployment Consultant team to offer decommissioning consulting services at your site.

To order INSEAD case studies please contact one of the three distributors below:

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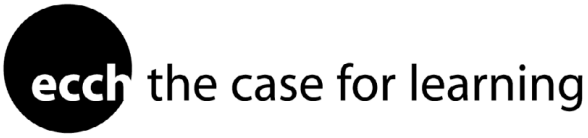

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Boulevard de Constance, 77305 Fontainebleau Cedex, France.
Tel: 33 (0)1 60 72 40 00 Fax: 33 (0)1 60 74 55 00/01 www.insead.edu

1 Ayer Rajah Avenue, Singapore 138676
Tel: 65 6799 5388 Fax: 65 6799 5399

Printed by INSEAD

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