

BP – WRMP Integration to the WBU

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Executive Summary

With a prestigious history based in Europe, BP has gradually become one of the leading oil and gas companies in the world. BP was originally founded in 1909 mainly as a company which focused on discovering and extracting crude oil reservoirs in Persia. Throughout the years, BP has transformed itself into a highly vertically integrated oil giant in the industry by developing innovative and creative ways to meet the world's ever-increasing demand for diverse energy.

BP has been able to grow and expand rapidly in a highly competitive industry following the constant trend of increased energy consumption in the world. As countries establish mature economic markets and developing countries continue to strive for rapid economic growth, energy demands on the oil and gas industry have increased. As a result, BP has made several mergers and acquisitions to make them the powerhouse energy company they are today.

However, BP has not always experienced good fortune while expanding and growing to meet the high energy demand of the world. BP's weaknesses were clearly exposed as the company endured several tragic safety and environmental compliance deviations which have set back the company's growth during the past few years. The explosion at the Texas City refinery in 2005 and the Deepwater Horizon oil spill in 2010 are two examples of safety incidents which brought much adverse attention to the company and the industry alike. Although the complete ramifications are not known regarding the incidents, BP has experienced significant financial hardships and divestments in the past few years which almost brought the company to bankruptcy.

As BP attempts to recover from the negative public perception of the firm while regaining the trust with all their stakeholders, the company is set to finalize yet another high risk multi-

billion dollar venture at the Whiting Refinery. BP has invested ~\$11 billion in an expansion project titled the Whiting Refinery Modernization Project (WRMP) which will allow the refinery to process heavy crude oil from the Canadian oil sand fields. The project is set for completion in late 2013 when it will be commissioned and brought online.

The WRMP has suffered considerable delays and additional expenses since the public announcement of the project in 2006. The project was first set to be completed by the end of 2011 but BP was forced to delay the project as a result of both internal and external factors. After a strong stabilizing year in 2011 where BP was able to once again make financial gains, the WRMP is back on the spotlight as one of the major project to complete and bring online in the short-term. BP is anxious once again to start benefiting from a large capital investment which offers them a competitive advantage in the Midwest refining industry.

However, after a thorough analysis of the company, a central problem is revealed which may adversely impact the organization in a similar manner as the Deepwater Horizon oil spill. BP needs to integrate the WRMP with the existing Whiting Business Unit (WBU) without any catastrophic events or detrimental impacts to the environment. Given BP's history on safety performance, BP does not appear to be ready to take on another high risk venture successfully.

Nonetheless, given the timeline of bringing the WRMP expansion online, BP still has time to resolve their central problem of integrating a multi-billion dollar expansion project into an existing refinery which is over 100 years old without any detrimental safety or environmental incidents. By designing and implementing a robust safety culture as the basis of operations at the BP facilities, BP will be in a position to successfully integrate the WRMP with the WBU and continue recovering and growing the company as years before.

BP: WRMP Integration to the WBU

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BP - WRMP Integration to the WBU

Introduction

BP is one of the leading global energy companies in the world. With sales and revenues of over \$375,517 million in 2011, BP has proven throughout the years to be part of the solution in meeting the challenge of satisfying the world's ever growing need for diverse energies. As a result of the continuing expansion into new territories, "BP is one of the world's leading international oil and gas companies, providing its customers with fuel for transportation, energy for heat and light, retail services and petrochemicals products for everyday items" (BP at a glance, 2012). BP currently employs over 80,000 people and offers products/services in over 70 countries worldwide.

BP originally started as the Anglo-Persian Oil Company back in 1909 which primarily focused on finding and extracting oil and gas. After almost going bankrupt searching for oil in Persia, a vast oil field was finally discovered which led to the company's continued growth we see even today. However, the company continued to struggle financially shortly after the discovery due to delays in building a refinery to produce usable products and the lack of customers since automobiles were not widespread at the time.

After suffering through several hardships, the Anglo-Persian Oil Company was finally stabilized after receiving a resounding endorsement by Winston Churchill who argued Britain needed a dedicated oil supply for their military. Winston Churchill was successful in his quest to "look out upon the wide expanse of the oil regions of the world" (History of BP, 2012) in order to protect Britain's interest. Churchill's endorsement solidified the Anglo-Persian Oil Company's long-term future since the government became a major shareholder in the firm. The Anglo-Persian Oil Company changed names several times throughout their history eventually to

be named BP. There were several mergers and acquisitions which also took place with companies such as Amoco, ARCO, Sohio, Castrol, and Aral.

BP currently produces diverse energies to meet the world's changing needs. BP is a distinctly vertically integrated company which is involved throughout the process of producing energy to the end users. BP has three divisional areas which include upstream (exploration, developments, and productions), refining and marketing, and alternative energies. Some of the petroleum based products which BP produces that impact our daily lives include gasoline, diesel, jet fuel, liquid propane gas (LPG), lubricating products, and a wide variety of plastics to name a few. Appendix A further illustrates the vast products produced from a barrel of oil.

BP conducts business in a highly competitive industry (oil and gas) and is always searching for the next competitive advantage to meet their overall goals and objectives while providing maximum value to shareholders. BP's main competitors include Exxon Mobil, Chevron, and Shell along with National Oil Companies (NOC). The Organization of the Petroleum Exporting Countries (OPEC) also impacts the oil and gas industry through their political/economical actions.

Experts believe by the year 2020 petroleum consumption will increase by forty percent for a total of 300 million barrels of oil daily. Meeting this demand will be an enormous challenge for the oil industry. In order to meet the higher energy demands, BP has invested a significant amount of capital in the Whiting Refinery Modernization Project (WRMP) which will have the capability of processing oil sands from Canada. The significant investment comes with many risks being that the project has an estimated price tag of ~\$11 billion. BP currently has the challenge of integrating the WRMP with the Whiting Business Unit (WBU), an existing refinery

which is over 100 years old, in order to increase production and meet the ever-increasing demand of energy in the world.

Section 1: History of the WBU & WRMP

The BP Whiting Business Unit (also known as the Whiting Refinery) was constructed in the late 1800s and became operational in 1889. The Whiting Business Unit (WBU) became part of BP in 1999 when BP and Amoco merged. It is located off the shores of Lake Michigan in the communities of Whiting, East Chicago, and Hammond, Indiana. At first, the refinery produced mainly kerosene and discarded residual waste products which included gasoline. In later years, the WBU started producing a number of petrochemical products including fuels, asphalt, and chemicals for various plastics.

The WBU has expanded several times throughout the years in order to increase production due to the increasing demands of gasoline in the region. However, the heavy capital investment required to further increase production was not beneficial to BP even as prices for the normal feedstock of crude oil increased to record levels. The WBU's location does not allow for the discounted heavy crude oil prices typical of crude oils from Mexico, South and Central America, and other parts of the world without the extraordinary increase in transportation costs. However, the recent technological advances in extracting oil from the vast Canadian oil sands make expenditure in refining assets potentially profitable due to the price difference between oil from the Canadian oil sands compared to typical crude oil feedstock.

In 2006, BP announced the Whiting Refinery Modernization Project (WRMP) to the public which was initially estimated at \$3 billion with a start date of 2007 and completion date of 2011. As BP notes, "the project will increase capacity for coking, hydrogen production, hydrotreating and sulfur recovery. The replacement processing units and enhancements to

existing refinery units will increase Canadian heavy crude oil processing capability by about 260,000 barrels per day” (BP Press Release, 2006).

Unfortunately, there have been many setbacks which have prolonged the completion of the project by over 2 years and have increased the cost to over \$10 billion. With so much scrutiny involved on completing the project, the WBU needs to ensure the WRMP will be integrated fully into the existing refinery with safety and environmental compliance at the forefront along with minimal operational issues in order to start paying down the capital expense of the project.

Section 2: External Environmental Analysis

2.1 The General Environment

Petrochemical refining started in the U.S. at first as a means to provide lighting. It has since developed into a sophisticated global multi-billion dollar industry which has significant economic power and offers an array of products which we use daily. Petrochemical demand has increased as nations developed, especially towards the end of the 20th century. As a result, prices for crude oil and petrochemical products have been volatile since supply is limited. Cartels such as OPEC along with National Oil Companies (NOCs) also developed which in large part control global crude oil supply and prices. Recently, governments have expressed an increased awareness and concern for both the security and environmental effects of the petrochemical industry.

The increased global demand for petrochemical products presents several challenges for petrochemical firms since supply of crude oil has many determinants which prevent accelerated growth currently needed. Political stability, global economic state, new discoveries, government regulations, terrorism, NOCs, and availability of alternative energies can significantly affect the

supply and demand of crude oil rather quickly. Recent technological developments along with a steady increase in crude oil have made the Canadian Oil Sands a feasible alternative crude oil used in refineries besides West Texas Intermediate and Brent crude oil which is most often analyzed. Increases in global oil and gas consumption in developing countries such as China and India along with projected increase in already developed markets will continue to put a strain on crude oil supply and drive petrochemical firms to find innovative ways to maximize petrochemical production for years to come.

2.2 Demographic Environment

The oil and natural gas industry is one of the largest industries in the world which impacts people of different races, genders, ages, religions, and social classes. The world population continues to grow and is currently over 7 billion indicating a potential increase in demand of oil and gas products for sustainable energy.

The population growth percentage remains at just over 1 percent while birth rate increases to ~19 births per 1,000 people and the death rate estimates at ~ 8 deaths per 1,000 people with life expectancy increasing to ~67 years. Religions still prevailing at the top of the list include Christian, Muslim, Hindu, and Buddhist. The leading languages include Mandarin Chinese, Spanish, English, Arabic, and Hindi. It is no coincidence that the three most populous countries in the world (China, India, and the United States) are also some of the leading users of oil and gas products. Estimates of age structure indicate ~ 92 percent of the world population is between 0-64 years of age which are the prime users of oil and gas products.

Being that oil and gas products touch the lives of so many people, the increasing worldwide population may be misleading on the growth rate of the oil and gas industry. As Keller & Kotler (2009) point out, “the less-developed regions of the world currently account for

76 percent of the world population and are growing at 2 percent per year, whereas the population in the more developed countries is growing at only 0.6% per year”. The significance to the oil and gas industry is that the drastic increase in population may not necessarily equate to substantial increase in oil and gas product consumption in those areas due to the extreme poverty levels where the population increase is occurring. The oil and gas industry cannot simply rely on mature markets such as in North America and Europe to continue their growth. The oil and gas industry will be heavily dependent on the developing countries especially in Asia to further expand their operations and remain competitive in meeting the world’s need for energy.

2.3 Economic Environment

Petrochemical products and crude oil consumption throughout the world continues to increase at a steady pace. “World oil consumption grows by an annual average of 1.5 million barrels per day through 2012” (Newell, 2011). However, the petrochemical market has experienced a high level of contraction over the past decade which is expected to continue in the short and long term as well. “The fossil fuel share of energy consumption falls from 84 percent of total U.S. energy demand in 2009 to 78 percent in 2035, reflecting rising fuel prices and the impacts of fuel economy standards and provisions in the American Recovery and Reinvestment Act of 2009 (ARRA), the Energy Improvement and Extension Act of 2008 (EIEA2008), the Energy Independence and Security Act of 2007 (EISA2007), and State legislation” (Newell, 2011).

The petrochemical refining market in the U.S. remains highly dominated by the eight largest refining companies which account for approximately 70 percent of refining capacity. Worldwide, national oil companies (NOCs) also continue to dominate the world refining capacity by accounting for over 50 percent of the overall worldwide production. The industry

also remains highly vertically integrated. Major oil companies both public and private continue to own the rights to oil supply and reserves, operate their own transportation methods, refine into various petrochemical products, and control sales at their own gas stations.

The U.S. market anticipated the decrease in worldwide supply of crude oil overseas and increases in domestic demand and has started investing profoundly in projects to process heavy crude oil from the Canadian oil sand fields. A refinery which has the flexibility to process both light and heavy crude oil feedstock is best positioned to maximize profits depending on the difference between light and heavy crude oil prices. “The difference in price between light and heavy crude oils is the light/heavy spread and is important to refineries that can efficiently process heavy crude oil” (Petroleum refining, 2011).

However, economic crisis around the world has also impacted the oil and gas industry significantly. As consumers find themselves with less spendable income, the amount of oil and gas products used decreases as well. Political instability has also resulted in various economic disruptions and fluctuations in prices throughout the industry. “The inherent difficulties of supply management, along with wild swings in demand, can and probably will cause violent swings in the price of oil. JPMorgan's commodities research team estimates that supplies can swing by 500,000 barrels per day in a month, while demand can double that move” (Fontevecchia, 2011).

2.4 Social-cultural Environment

There are many social factors that influence consumers to use oil and gas products throughout the world. Gasoline and other petrochemical products have a wide range of end users and applicability. For many people, oil and gas products are a necessity for everyday life. Automobiles and buses are an integral part of the culture of many developed countries and less-

developed countries. Transportation is needed for many aspects of our lives including work, school, entertainment, recreation, and travel. Vehicles, houses, and education are all viewed as a symbol of achievement in cultures from many developed countries. As countries become more and more developed, the use of oil and gas products increases as well.

India and China are the leading countries in increasing oil and gas consumption as their economies have experienced a significant increase in the past decade. The countries have expanded their economies rapidly throughout the decade which has led to increasing demands of the oil and gas industry. The societies are getting accustomed to having cars, electricity, and plumbing along with the additional luxuries experienced with economic growth.

Social factors are just as prevalent in influencing the use of oil and gas products. Many reference groups including family friends, neighbors, and co-workers influence the use of oil and gas products. Family factors may include the desire to travel to visit relatives and friends along with the needs presented by the immediate family on a day-to-day basis. In more developed countries, children may influence the need to use oil and gas products through various school activities such as sports practice, band practice, and scholastic programs. Friends may also influence the need for oil and gas products through activities such as going to the movies, dining out, and road trips.

The most significant social-cultural drive for oil and gas consumption is the deeply embedded fundamental concept in the world's culture for continued economic growth. The world is dependent on oil to meet their ever-growing energy needs. Unless radical changes are implemented to limit or control energy use or alternative energies are developed and become widespread, the world will continue to rely on oil for energy. As Barceló (2012) proclaims, "we have no choice. We must substantially reduce our dependency on oil. If possible, we must

completely replace our dependence on oil as fuel to generate our electric power with coal and/or natural gas”.

2.5 Natural Environment

The general public, governments, and shareholders alike are all concerned with issues related to effects on the environment from oil and gas production. As Keller and Kotler (2009) mention, one finite nonrenewable resource, oil, has created serious problems for the world economy. As oil prices have soared, companies are searching for practical means to harness alternative energy forms such as solar, nuclear, and wind”. Oil and gas companies have recognized the detrimental effects caused the industry and have spent millions of dollars on upgrades to lessen the environmental impact of producing oil and gas products in developed countries. However, the initiative is not so profound in less-developed countries where economic growth supersedes any environmental concerns and little political pressure or regulations are in place to deter heavy pollution.

A noteworthy push by the industry in developed countries to lessen the environmental impacts has not been fully received by everyone. As Magnuson (2011) mentions, “this discord between our culturally embedded habits of mind and the physical condition of our planet represents a lag in consciousness. This lag in consciousness has merged with contemporary economic discourse to spawn the fantasy of green economics”.

Nonetheless, refiners are responding to these challenges by placing emphasis on reducing greenhouse gas emissions. Appendices C and D illustrate the trends regarding energy related CO₂ emissions which appear to be decreasing. Increased regulations on emissions from the oil and gas industries may create additional expenditure by the industry especially in developed countries. As BP notes in their newly found corporate values, “we help the world meet its

growing need for heat, light and mobility. We strive to do that by producing energy that is affordable, secure and doesn't damage the environment" (Our values, 2011).

Section 3: The Environment within the Oil and Gas Industry

3.1 The Size of the Oil and Gas Industry

With the continued increase in petrochemical product demand throughout the world, a petrochemical company must be able to produce as much throughput of raw material into sellable products in order to stay competitive. The leading producer of oil in the industry is Russia, producing 10.72 million barrels per day. Russia represents about twelve percent of the world oil supply. In addition, Russia holds about sixty million barrels of oil reserves or about five percent of the oil reserve market. The second producer of oil in the industry is Saudi Arabia, producing 9.67 million barrels of oil per day. Saudi Arabia also embodies about twelve percent of world oil market. However, Saudi Arabia has the world's largest oil reserve holding about two hundred sixty five million barrels of reserved oil.

The United States is a close third producing 8.37 millions of oil per day. The United States represents eleven percent of the market of world oil supply. China is the fourth leader in the oil industry producing 4.27 million barrels of oil per day. China holds about five percent of the world oil supply. The fifth largest oil producer is Iran, producing 4.25 million barrels of oil daily. Iran accounts for about five percent of the world oil supply and is considered a key country in the industry because of its large oil reserve. Iran's current reserve supply is 137 billion barrels or ten percent of the world's oil reserve. The total capitalization of the United States equity markets is somewhere in the fifteen trillion range, and the total market capitalization of leading Oil and Gas Pipeline, Storage, Transport, Refining and marketing companies is two hundred twenty billion or about two percent of the overall market.

The petrochemical industry size is hard to predict since there are so many economic variables which can affect supply, demand, production, and cost. “The key factors determining long-term expectations for oil supply, demand, and prices can be summarized in four broad categories: the economics of non-OPEC conventional liquids supply; OPEC investment and production decisions; the economics of unconventional liquids supply; and world demand for liquids” (Annual Energy, 2011). Movement in any one of the key factor has the potential to cause immediate shifts in supply, demand, production, and costs throughout the world.

3.2 The Growth Trends of the Industry

The growth for global oil and gas products has many determinants which can sway projections rather quickly. “There is already evidence that worsening macroeconomic conditions and demand destruction resulting from high oil prices have started to hit oil consumption” (Global Energy, 2011). Although overall growth is projected to be positive in the short and long term outlook, the rate at which growth will take place is expected to decrease. “According to the updated BMI model, 2011 global oil consumption will increase by 1.71%, global oil production will rise by 1.05%, and oil demand growth of 1.78%” (Global energy, 2011).

Petrochemical production in the world and the U.S is forecasted to continue growing slowly especially in the next 5 years when U.S refineries will be upgraded to process oil from the Canadian oil sand fields. Macroeconomics conditions will remain a vital part of the rate at which the large upgrades will be completed. Appendix E contains a chart illustrating the trend towards a decrease in both production and demand in the U.S. “In the US, we now forecast that liquids consumption will grow by just 0.57% in 2011, compared to a growth rate of 2.01% in 2010. The demand outlook for 2012 is only slightly higher at 0.7%, again with risk to the downside if macroeconomic conditions continue to deteriorate” (Global energy, 2011).

Although the growth in the U.S and Europe for petrochemical products appears to be low in the short term, developing countries are making up for the slow growth in the developed mature markets. China continues to lead the group of developing countries in petrochemical demand and consumption even though initiatives are being pursued by the government to minimize inflation and pollution at a national level. Extreme policy changes in either case have the potential to affect the petrochemical demand and consumption in the short and long term.

3.4 The nature of competition for BP in the Oil and Gas Industry using Porter's Five Forces Model to Examine Competition.

As mentioned, the oil and gas industry is one of the largest industries in the world and also one of the most competitive industries as well. Entry into the oil industry is difficult because it requires large capital investments, scarce natural resources, and a mature distribution channel. However, exiting the industry is significantly easier. Subsequently, many private and integrated oil companies are not leaving the market on their own will. With the industry's structure being monopolistic in the form of an oligopoly, many firms are forcibly exited from the highly competitive industry. As Ovidiu (2011) notes, "The overall industry attractiveness does not imply that every firm in the industry will return the same profitability. Firms are able to apply their core competencies, business model or network to achieve a profit above the industry average".

Rivalry among established firms is highly competitive throughout the industry. As Georgopoulos, Karagiannopoulos, & Nikolopoulos (2005) mention, "the intensity of rivalry, which is the most obvious of the five forces in an industry, helps determine the extent to which the value created by an industry will be dissipated through head-to-head competition". Although National Oil Companies (NOCs) produce over 50 percent of the world's oil and gas products, the industry is large enough to promote rivalries between private and public companies for market

share. Companies acquire market share through extensive marketing, developing innovative additives, and through mergers and acquisitions.

The bargaining power of buyers can be momentous in any industry if buyers collectively made demands from the industry. As notes, “although customers can be influential, the truth is that most accept the price of the product, either because they feel they cannot affect its price or because they lack knowledge about its true cost and value”. Conversely, buyers have accepted the industry trends of volatile prices as a result of the fluctuations in crude oil prices and have not had much impact on the industry in setting prices.

The bargaining power of suppliers is the leading factor of the industry. As Porter (2008) notes, “powerful suppliers capture more of the value for themselves by charging higher prices, limiting quality or services, or shifting costs to industry participants”. With groups such as Organization of the Petroleum Exporting Countries (OPEC) set up specifically to control crude oil prices, the suppliers have the upper hand in establishing and controlling prices of raw materials.

Although efforts are underway to develop alternative energies, the movement has been suppressed for decades by big business and practical alternative energies are not readily available on a mass scale. As Carle, Axhausen, Wokaun, & Keller (2005) notes, “fuel cell technology is a substitute for traditional gasoline and diesel internal combustion engines. Basic economic theory states that substitutes will only be adopted when they are cost competitive with the original good. In other words, fuel cell technology will not be adopted unless the performance, price and infrastructure needed are in the same range as traditional gasoline and diesel engine technology”. There are currently no substitute products for several of BP’s petrochemical products which will impact the use in the short-term. BP has acknowledged the potential of global warming and is

also involved in developing alternative energies. BP is currently heavily involved in creating sustainable biofuels, solar energy and wind energy in an effort to minimize pollution caused by extracting and refining crude oil.

Section 4: BP's Market

4.1 Main products and services

BP is a leading global energy firm which offers diverse products across 6 continents and over 80 countries with over 80,000 employees. BP concentrates in specialized tasks between several functional departments in order to meet the energy needs for their customers around the world. “We use world-class assets, technology, capability and know-how to meet energy needs and deliver long-term value” (BP’s key, 2011).

BP main products include a vast array of petrochemical products which include fuel gasses, naphtha, distillate, gas oil, residual oils, lubricants, and solar energy. The products are all further processed to create end products such as gasoline, jet fuel, diesel, asphalt, liquid gas propane, feedstock for plastics along with several other products.

4.2 The benefits of customers from BP's products

Customers experience many benefits from BP's product. Customers use BP's products for a variety of ever day functions such as transportation, heating up homes, cooking, and providing lubrication.

BP offers various fuels which allow for a diverse line of transportation. Customers benefit from gasoline which fuels automobiles, diesels which fuel trucks and buses, and jet fuel which fuels airplanes. Customer also benefit from the naphtha products which are further refined to produce liquid gas propane (LPG) for heating and cooking along with other byproducts used in gasoline blending. Solar and wind energy is also harnessed by BP's

customers in order to provide much needed electrical needs to thousands of people. Customers also benefit from industrial and commercial lubricants produced by BP such as motor oil and various greases. Residual oil products from every barrel of crude oil do not go to waste. Residual oil is used primarily to make asphalt which pave roads and sealants which are used in roofing.

4.3 Primary markets and market segments

BP currently operates in a divisional structure due to its large size and diverse services and products. “BP's businesses are organized to deliver the energy products and services people around the world need right now” (BP global, 2011). BP has three divisional areas which include upstream (exploration, developments, and productions), refining and marketing, and alternative energies.

The upstream division is “the area of business that finds, produces, and transports oil and gas to market” (Upstream, 2011). The division was recently restructured as a result of the Deepwater Horizon oil spill into three separate units: exploration, development, and production. “The exploration division is accountable for renewing our resource base through access, exploration and appraisal. The developments division is accountable for the safe and compliant execution of wells (drilling and completions) and major projects, building on the centralized developments organization established in 2010. The Production division is accountable for safe and compliant operations, including upstream production assets, midstream transportation and processing activities, and the development of our resource base” (BP annual, 2010).

The refining and marketing division “ is responsible for the supply and trading, refining, manufacturing, marketing and transportation of crude oil, petroleum, petrochemicals products

and related services to wholesale and retail customers” (BP annual, 2010). The alternative energies division “comprises BP’s low-carbon businesses and future growth options outside oil and gas, which we believe have the potential to be a material source of low-carbon energy and are aligned with BP’s core capabilities. These are biofuels, wind and solar, along with demonstration projects and technology development in carbon capture and storage (CCS)” (BP annual, 2010). The alternative energies division is “focused on the newest forms of fuel and power, but it draws on the traditional strengths that BP has built up over a century of finding, producing and delivering energy to its customers” (BP alternative, 2011).

4.4 Primary ways customers learn about BP’s products and services

Customers learn about BP through intense marketing and advertising campaigns. BP focuses a tremendous amount of resources maintaining favorable public relations with the general public, customers, government, and local officials. BP continues to use television and radio communication to communicate their presence in the market and advertise their products. BP has also started to market and advertise online as social media groups continue to flourish. BP recently created a social media page to communicate the recent developments of an ongoing environmental disturbance created in the Gulf of Mexico.

BP is also closely involved with local communities in which they have facilities located in. BP sponsors several local events in the neighboring communities to promote community involvement. BP offers several brands throughout the world which include BP, ARCO, ARAL, and Castrol.

4.5 Percent of annual revenue spent on marketing and sales

Selling, general, and administrative expenses typically include marketing and sales expenses and are reported in the income statement of the organization. With sales and revenues over \$375 billion in 2011, BP spent ~ 13.96 billion in selling, general and administrative expenses which is ~3.72% of the sales and revenues for the year. BP has maintained a consistent percentage of annual revenue spent on marketing and sales throughout the past decade which is also comparable to their competitors.

Section 5: BP's Mission

BP is facing one of the toughest periods in the firm's history. Svanberg (BP annual, 2010) expresses "2010 was a profoundly painful and testing year". With the recent catastrophic safety events of the past few years, BP needs to focus on regaining credibility as a safe and profitable firm. "Each year, BP's Sustainability Report looks at how our progress contributes towards our long-term prospects as a company and to society as a whole. This report should therefore start with a clear acknowledgement – 2010 was a year that called BP's sustainability into question" (Group chief, 2010).

In an ever-changing global environment, BP has a long road to regaining the prominent status it once held as leader in the energy industry. "BP's mission for 2011 and beyond is to grow value for our shareholders in a way that is safe and sustainable. 2011 will be a year of consolidation in which we focus on our number one priority – safety – and strengthen the drivers of long-term performance, such as risk management, capability and relationships. We will invest in areas where we excel, such as exploration, and we will enter into new types of relationships with partners" (Group chief, 2010).

Section 6: Internal Environmental Analysis

6.1 Financial Analysis of BP

The previous year for BP was a continued effort to stabilize the company financially while freeing up assets in order to consolidate as a result of the Deepwater Horizon oil spill. BP remains a highly vertical company by owning and operating upstream and downstream segments throughout the oil and gas industry. BP continues its pursue in bringing safe and reliable energy to the world by maintaining operations in exploration and production of gas and oil, marketing and trading natural gas, generating electricity (power), and producing and marketing natural gas liquids.

BP made significant organizational changes in 2011 to ensure safety was at the core value of the culture's firm. As Svanberg mentions in the BP Annual Report (2012), "the board set three priorities for BP. Safety must be enhanced and embedded. Trust must be regained. Value must be created through a clear strategic plan". A tremendous effort was undertaken to demonstrate the seriousness of safety throughout the organization along with the emphasis of meeting the obligations of the Deepwater Horizon incident.

BP recorded revenues of \$375,517 million in 2011 compared to \$297,107 in 2010. However, profits also increased from the previous year. The net profits for 2011 were \$29,097 million compared to a net loss of 3,719 million in 2010. Dividends were also restored which indicates BP can also continue creating value to shareholders even through one of the most challenging times in their history. As a method of comparing financial performance, ratio analysis is used to compare BP's previous two years to the industry average. The financial ratios have been calculated using BP's balance sheet and income statement (see Appendix H & I) along with information provided by EBIT Financial Analyses Center. As always, caution must still be

used when comparing companies with financial ratios given that not all balance sheets and income statements are created equal.

BP's Financial Ratios for 2011 & 2010

		2011	2010	Ratio Change	Industry Average
Short-term Solvency / Liquidity	Current Ratio	1.16	1.15	0.01	1.26
	Quick Ratio	0.69	0.68	0.01	0.85
	Cash Ratio	0.17	0.24	-0.07	0.29
Long-term Solvency / Leverage	Total Debt to Total Assets	0.28	0.32	-0.04	0.89
	Debt to Equity	0.4	0.48	-0.08	0.24
	Time Interest Earned	32.17	-3.12	35.29	43.08
	Inventory Turnover	14.63	11.33	3.3	17.9
	Day's Sale in Inventory	25	32	-7	20
	Receivables Turnover	13.45	12.25	1.2	10.65
	Day's Sale in Receivables	27	30	-3	34
Profitability Ratios	Total Asset Turnover	1.28	1.09	0.19	1
	Profit Margin	0.0684	-0.0125	0.0809	0.0847
	Return on Assets	0.0877	-0.0137	0.1014	0.0846
Market Value	Return on Equity	0.23	-0.392	0.622	0.1756
	Price-Earnings	5.69	-40.11	45.8	9.36
	Market-to-Book	1.31	1.57	-0.26	1.64

Figure 1 – BP's Key Financial Ratios for 2011 & 2012

BP made tremendous strides in 2011 to overcome significant financial hardships suffered in 2010 and remains fully committed to the Gulf of Mexico restoration plan. As noted by the key financial ratios in Figure 1 below, BP is well on its way to recovery and profitability due to the committed efforts of all their employees.

6.1.1 Short-term Solvency

Short term solvency ratios are often times used in financial analysis to measure the liquidity of a company. As Jaffe, Ross, & Westerfield (2010) note, “the primary concern is the firm’s ability to pay its bills over the short run without undue stress”.

One of the most common and easily interpreted ratios to provide short-term solvency is the current ratio. The current ratio is simply the current assets divided by the current liabilities. BP’s current ratio increased by 0.01 in 2011 compared to 2010. BP’s 2011 current ratio of 1.16 is slightly below the industry average of 1.26. Nonetheless, the current ratio remains over 1 which indicates BP has the ability to meet its short-term debt without any issues. The current ratio also indicates BP continues to re-invest in the company and while maximizing the use of short-term assets as well.

The quick ratio is calculated similarly to the current ratio with the exception of omitting inventory as part of the current assets. Given the unreliability of true market value of inventory in most industries, the quick ratio provides short-term solvency for the more easily liquid current assets. BP’s quick ratio increased by 0.01 from 2010 to 0.69 in 2012. BP’s quick ratio is lower than the industry average which indicates BP carries a significant amount of inventory or has overestimated sales and production. However, given that BP’s products are frequently and rapidly used, carrying a higher than normal level of inventory is not detrimental to the firm given the oil and gas industry.

The cash ratio is simply the cash and cash equivalent on hand divided by the current liabilities. Being that cash and cash equivalent is the most liquid asset of a company, the cash ratio gives creditors a measure of very short-term liquidity for a company in order to determine how much credit it may offer. The cash ratio is not meant to provide the real value of the

company since it omits several asset categories but simply as a means to provide very short-term liquidity on current liabilities. As expected, BP's cash ratio was below the industry average in 2010 and continues to decrease in 2011 to 0.17. BP made significant financial contributions and commitments to the Deepwater Horizon oil spill in the past two years which is reflected in the lower than normal cash ratio.

6.1.2 Long-term Solvency

Long-term solvency ratios measure a company's long-term ability to satisfy their financial obligations and are indications of the company's financial leverage in the long-run. The long-term ratios give an indication on the extent to which a firm is using long-term debt. As mentioned in the Bloomsbury Business Library (2007), "financial leverage ratios present analysts and investors with an excellent picture of a company's situation, how much financial risk it has taken on, its dependence on debt, and developing trends".

BP recorded a total debt to total assets ratio of 0.28 in 2011 compared to 0.32 in 2010. The company was well below the industry average of 0.89 which indicates BP has more equity in place than the industry average along with less debt for every \$1 in assets. The debt-equity ratio for BP falls to 0.4 in 2011 compared to 0.48 in 2010 which indicates creditors have less than 50% investment in the company compared to shareholders. However, BP is above the industry average of 0.24. Yet another measure of long-term solvency is the time earned interest ratio. The time earned interest is calculated by dividing the earnings before interest and tax (EBIT) by the total interest. BP experienced a dramatic increase in time interest earned in 2011 with a ratio of 32.17 compared to a negative ratio in 2010 of -3.12. Once again, the Deepwater Horizon oil spill had severe impacts to the time interest earned ratio 2010 indicating the negative

value. BP is heading in the right direction in 2011 by increasing the time interest earned ratio closer to the industry average of 43.08 in 2011.

After reviewing the short and long-term solvency of a BP, we now take a brief look at the asset management ratios or turnover measures of the firm. The asset management ratios indicate how efficiently BP utilizes their assets to generate sales.

The inventory turnover ratio indicates the amount of times an inventory was turned over in a year. For BP, the inventory turnover for 2011 increased to 14.63 compared to 11.33 in 2010. However, BP is still well off the industry average of 17.9. The days' sale in inventory ratio is an indicator of how long it took to turn over the inventory one time. BP's days' sale in inventory for 2011 was 25 days which improved from 2010 which was 32 days. As expected from the inventory turnover rate, BP remains below the industry average of 20 days as well.

Given that BP takes longer to turnover their inventory, we now analyze how quickly BP collects on sales through receivable turnover and days' sales in receivables ratios. Receivables turnover measures the amount of times outstanding credit accounts are collected and lent back out. BP recorded a receivables turnover rate of 13.45 times in 2011 compared to 12.25 in 2010. BP is well ahead of the industry average of 10.65 times. Days' sale in receivables indicates the amount of days required to turn over the receivables accounts. BP's days' sale in receivables for 2011 was 27 days compared to 30 days in 2010. As expected, BP beat the industry average of 34 days as reflected in the receivables turnover ratio. It appears BP has a firm control on collecting outstanding accounts for their products/services.

Finally, total asset turnover is sales divided by total assets. Total asset turnover measures how much money in sales is generated by every dollar of asset available. BP recorded total asset

turnover of 1.28 times in 2011 compared to 1.09 times in 2010. Bp was well ahead of the industry average of 1.0 which indicates BP was able to generate more sales for every dollar of asset than the industry.

6.1.3 Profitability Ratios

Next we turn to profitability ratios for a firm which measure how efficiently the firm uses their assets along with how efficient the operations and processes are performed. The profitability ratios indicate how successfully the company is operating.

One of the most common measure of profitability and a focal point of many companies is the profit margin ratio. The profit margin ratio measures the percentage of net income for every dollar in sales by dividing the net income by sales. BP's profit margin for 2011 was 0.0684 or 6.84% compared to a negative profit margin for 2010. The Deepwater Horizon oil spill had dramatic implications on the profit margin for the company considering the significant amount of money issued for the response effort. BP continues to lag the industry average of 0.0847 or 8.47% but appears to be on the rebound. The return on assets (ROA) is an indicator of profit for every dollar of assets and is calculated by dividing net income with total sales. BP's ROA for 2011 was 8.77% up from a negative ROA in 2010. BP made tremendous gains from a year ago and is currently beating the industry average of 8.46%. Return on equity (ROE) measures the profit for every dollar in equity. BP's ROE in 2011 was 23% compared to a negative ROE in 2010. As with the ROA, BP appears to be back on track once again beating the industry average of 17.56.

6.1.4 Market Value Ratios

Market value ratios take into account the market price per share of stock for the first time in the financial analysis of the company. Price-earnings (PE) ratio is a measure of a company's price per share compared to its earnings per share. As Jaffe, Ross, & Westerfield (2010) state, "the PE ratio measures how much investors are willing to pay per dollar of current earnings, higher PEs are often taken to mean that the firm has significant prospects for future growth". BP had a PE ratio of 5.69 times in 2011 compared to a negative PE in 2010. The industry PE continues to be higher than BP's PE in part due to the continued expenses incurred by the Deepwater Horizon oil spill. Market-to-book ratio is used to compare the market value of the company's investment compared to their cost. BP's market-to-book ratio for 2011 was 1.31 compared to 1.57 in 2010. The industry average is slightly higher at 1.64 indicating BP is not creating as much value for shareholders compared to the industry average.

6.2 SWOT Analysis

BP is one of the global leaders in the oil and gas industry with products and services offered in over 80 countries worldwide. BP remains a highly vertically integrated company even after the Deepwater Horizon incident which caused a significant disinvestment in assets throughout the organization. BP remains fully operational in finding oil and gas, developing and extracting oil and gas, moving oil and gas, making fuels and products, selling fuels and products, and investing in renewable energy. However, BP has been plagued with serious personal safety and environmental incidents which have caused considerable harm to their reputation of being a green company. As the world continues to develop and require more energy, environmental restrictions appear to be on the rise which also may offset revenues and profits. Figure 2 (below) presents a SWOT analysis summary for BP. As Deresky (2011) notes, "SWOT analysis is an

assessment of a firm’s capabilities (strengths and weaknesses) relative to those of its competitors as pertinent to the opportunities and threats in the environment for those firms”.

SWOT Analysis for BP

Internal	
Strengths	Weaknesses
<ol style="list-style-type: none"> 1. Wide Global Presence 2. Highly Vertically Integrated Operations 3. High Focus on R&D 	<ol style="list-style-type: none"> 1. Deepwater Horizon Oil Spill 2. Explosion in Texas City Refinery 3. Negative Public perception
External	
Opportunities	Threats
<ol style="list-style-type: none"> 1. Rising demand for petrochemical products worldwide 2. Large Investment in Alternative Energy 3. North Sea Acquisitions 	<ol style="list-style-type: none"> 1. Risk concerning environmental regulations 2. Instability in oil-producing countries 3. Pending lawsuits from Deepwater Oil Spill

Figure 2 - SWOT Analysis Summary for BP

6.2.1 Strengths

Wide Global Presence

BP currently offers their products and services in over 70 countries worldwide. Over the years, BP has established a strong presence and positive name brand recognition in Europe, the U.S., Canada, South America, Asia, Russia, and regions in Africa. BP also continues to pursue entry into other regions of the world where energy demand is increasing especially in developing markets such as India. As noted in the BP Annual Report (2011), “In 2011, BP acquired from Reliance Industries Limited (Reliance) a 30% interest in each of 21 oil and gas production-sharing agreements operated by Reliance in India for \$7.0 billion”.

BP's wide global presence also allows the company to build relationships in various markets to promote their products, services, and name brand which may facilitate entry into foreign markets. "BP's widespread international operations enable it to take advantage of opportunities arising in emerging markets. Therefore, the company's wide geographic presence enables it to gain access to key markets as well as to attain a competitive edge over its peers"

(BP Plc, 2011)

Highly Vertically Integrated Operations

BP is a highly integrated company with operations throughout the oil and gas industry. BP is involved in the hydrocarbon value chain from finding discovering oil and gas supplies to selling end products to consumers. "By operating across the full hydrocarbon value chain we believe we can create more value for shareholders, as benefits and costs can often be shared by our two segments. We can develop shared functional excellence more efficiently in areas such as safety and operational risk, environmental and social practices, procurement, technology, and treasury management" (BP annual report, 2011).

In an industry which has experienced severe contraction in the past two decades through mergers and acquisitions, the BP name brand has withstood the test of time. "Distinctive brands, cutting-edge technology and building and sustaining customer relationships are cornerstones to our approach to market and underpin our success" (BP annual report, 20110).

High Focus on Research and Development

BP is also a global leader when it comes to developing new technologies and bringing innovative and creative ways to improve processes throughout the oil and gas industry. BP maintains a sophisticated research and development (R&D) team with an emphasis on

continuous improvement by developing and implementing new methods to differentiate between their competitors. “Strong R&D capabilities provide BP to attain competitive advantage over its peers, maintain technological edge over its competitors, and stay ahead of industry trends. In addition, it allows the company to ensure safe and reliable operations by strengthening its portfolio, getting more from its resource base and winning new access” (BP Plc, 2011).

Even with the significant cost associated with the Deepwater Horizon oil spill, BP recognizes the importance and benefits from a robust R&D division and continues to fund it without any disruptions. As noted in the BP Annual Report (2011), “in 2011 we invested \$636 million (of which \$12 million related to the response to the Deepwater Horizon incident) in research and development (R&D). This compares with \$780 million in 2010 (of which \$211 million related to the response to the Deepwater Horizon incident), and \$587 million in 2009. The increase in the underlying R&D spend is related to our major technology programmes”.

6.2.2 Weaknesses

Deepwater Horizon Oil Spill

BP was directly involved in the Deepwater Horizon oil spill in April, 2010 which killed 11 workers and is considered one of the worst environmental disasters in the petrochemical. With millions of oil being released in the Gulf of Mexico, BP accepted full responsibility from the forefront and presently continues the restoration effort in the surrounding communities. Yet, the full implication of the incident to BP is widely unknown. Hoffman & Jennings (2011) note “the processes by which people think about and attend to an event like the BP Oil Spill are social and cultural, shaped by the group, organization, industry, and organizational field of which they are a part”.

Unfortunately, the oil and gas industry is a complicated and sophisticated network which many people do not understand completely. The unknowns leave the general public with speculations and uncertainty regarding the industry. As BP's CEO proclaimed in the Annual Report (2011), "following the tragic Deepwater Horizon accident of 2010, BP entered 2011 facing a range of uncertainties. These included concerns about our ability to operate safely in deep water, meet our financial commitments in the Gulf of Mexico, and recover the trust and value we had lost. We were also subject to intense speculation around the future and direction of the company".

Regardless of the full implications on BP, "the Gulf of Mexico oil spill has damaged BP's reputation, which may have a long-term impact on the group's ability to access new opportunities, both in the US and elsewhere. Adverse public, political, and industry sentiment towards BP, and towards oil and gas drilling activities generally, could damage or impair the company's existing commercial relationships with counterparties, partners, and host governments" (BP Plc, 2011). The Deepwater Horizon oil spill presents a momentous challenge for BP to overcome in the short and long-term.

Explosion in Texas City Refinery

The explosion at the BP Texas City refinery in 2005 killed 15 contract workers and injured over 100 additional workers. The incident raised awareness on the safety culture of the company and the industry in which the end products are meant to explode but in a controlled environment. The explosion disclosed several deficiencies in place throughout BP operational processes. As Brent Coon, a leading lawyer for workers involved in the Texas City explosion, mentions in a recent interview, "whatever Tony Hayward and other BP executives say, Coon doesn't think the

company's spots had changed since the earlier accident at Texas City, when it was proved to have disregarded the safety of its refinery workers”.

The explosion also sparked a new charge of BP not meeting environmental compliance regulations at the Texas City refinery. “The Texas Office of Attorney General, on behalf of the Texas Commission on Environmental Quality (TCEQ) filed a petition against BP Products asserting certain air emission and reporting violations at the Texas City refinery from 2005 to 2009, including the March 2005 explosion and fire” (BP Plc, 2011). The explosion created several legal and public relation battles which continue to haunt BP to this day. As a result of all the turmoil in the region and the damage to the reputation in the area, BP is considering selling the refinery which will result in a decrease of overall production in the U.S. for the company. As noted in the BP Annual Report (2011), “we also announced our intention to divest the Texas City refinery and the southern part of the US West Coast FVC, including the Carson refinery, roughly halving our US refining capacity. BP will ensure that the fulfillment of current regulatory obligations associated with the Texas City refinery is reflected in any transaction”.

Negative Public perception

BP has experienced several safety and environmental incidents in the past few years which have the potential to compromise a reputation which was seemingly growing strong as being a green company. Oil leaks on pipelines, unethical trading in the LPG market, refinery explosions, and deepwater oil drilling leaks are just a few examples of the incidents of the past few years for BP. The company is also at risk of losing investors as a result of the significant costs associated with the latest incident in the Gulf of Mexico. “There is significant uncertainty in the extent and timing of costs and liabilities relating to the Incident, the impact of the Incident on our reputation

and the resulting possible impact on our licence to operate including our ability to access new opportunities” (BP Annual Report, 2011).

Being that the oil and gas industry does not have a favorable opinion from the general public as it stands; the significant incidents of the past two decades involving BP have led the public to start distancing from the company even more. With what seems to be incident after incident for BP, there does not seem to be an end in sight and BP is viewed as the example of what is wrong with the industry. Along with the immediate losses from the incidents, “such events causing environmental damage could result in heavy financial penalties for the company eroding its profits. In addition, such law suits could also tarnish its brand image” (BP Plc, 2011).

6.2.3 Opportunities

Rising demand for petrochemical products worldwide

As the world population increases and the demand on energy increases, so does the demand for products and services from the oil and gas industry. Although the high demand increase experienced in the past are slowing down in mature markets such as the U.S. and parts of Europe, developing countries such as India and China are experiencing significant increases. BP Chairman Carl-Henric Svanberg attests, “BP Energy Outlook 2030 tells us that rising populations, increasing levels of life expectancy and improving standards of living will continue to generate growing demand for energy. I expect these dynamics to provide BP with opportunities for decades to come. The report projects that fossil fuels will be providing around 80% of the world’s energy in 2030. This will require companies such as ours to overcome substantial technical and physical challenges”. With a wide presence in the global market, BP is primed to immediately take advantage of new opportunities in developing markets while

maintaining a strong presence in mature markets. As demand for oil and gas products continue to increase worldwide, BP is strategically positioned to take advantage of new opportunities.

Large Investment in Alternative Energy

BP is a diverse energy company with operations in oil, gas, and alternative energies. The world's energy needs continues to grow as the world population continues to grow and developing countries continue accelerated economic growth. BP has acknowledged the potential of global warming and the detrimental consequences to the environment of producing petrochemical products. Therefore, BP has made hefty investments in the alternative energy segment even though internal research indicates fossil fuels will provide ~80% of the world's energy needs by 2030. BP has committed to investing over \$8 billion by 2015 on alternative energies including solar and wind. As an example, "the company is expanding its biofuels business in Brazil through an acquisition. In March 2011, BP agreed to acquire majority control of the Brazilian ethanol and sugar producer Companhia Nacional de Acucar e Alcool (CNAA)" (BP Plc, 2011).

North Sea Acquisitions

BP continues their strong presence in the North Sea and made additional commitments in the region during the past year. "During the year we also announced we will be investing approximately \$14 billion – with our partners – in the UK North Sea" (BP Annual Report, 2011).

The North Sea region is a hot spot for BP operations which includes offshore explorations, integrated oil operations, and natural gas processing and transportation. BP continues to believe the North Sea is an area where further gains are possible especially through offshore exploration and extraction. "The company has extensive offshore exploration operations in the North Sea.

Offshore exploration in the North Sea has been highly prospective in the past and intensive exploration work has been carried out in this region in the past few decades” (Datamonitor, 2011).

6.2.4 Threats

Increasing environmental regulations

Global warming and the detrimental effects on the environment by producing products and services in the oil and gas industry have been in the forefront of environmental groups for a number of years now. The general public is also raising the awareness of the amount of an types of pollution the oil and gas industry is producing. Being that worldwide demand in continuously increasing, pollution from producing petrochemical products is also on the rise resulting in more and more stringent regulations. “With rising awareness of the effect that the environment has on human health, regulatory standards have been continuously improved in recent years. In 2005, one of the most important developments in this area has been the introduction of the Kyoto Protocol for the reduction of greenhouse gas” (BP Plc, 2011). BP has acknowledged the possibility of global warming and is committed to developing alternative energies to lower greenhouse emissions and demand and production for products and services increase.

Significant incidents in the oil and gas industry also help raise the awareness of environmental pollution from the industry. “After the Gulf of Mexico oil spill, it is likely that there will be more stringent regulation of oil and gas activities in the US and elsewhere, particularly relating to environmental, health and safety controls and oversight of drilling operations, as well as access to new drilling areas. Regulatory or legislative action may impact the industry as a whole and could be directed specifically towards BP” (BP Annual Report,

2011). Developed countries where mature markets are in place have the most stringent environmental regulations and are areas where BP produces several of their products which will require additional costs to meet any further environmental regulations.

Instability in oil-producing countries

BP is very dependent on suppliers for their raw material (crude oil) which is a limited resource and exhaustible. The political and economic stability of oil-producing countries is crucial to the short and long-term operations of the company. “Though BP has been operating in these countries for a long time and understands the local environment very well, much of the geopolitical risks are outside its control. In particular, the company’s investments in the US, Russia, Iraq, Egypt, Libya, and other countries could be adversely affected by heightened political and economic environment risks” (BP Plc, 2011).

The recent turmoil experienced in Libya is an example of the possible disruption in crude oil presented by just one country. “We have operations, and are seeking new opportunities, in countries where political, economic and social transition is taking place. Some countries have experienced, or may experience in the future, political instability, changes to the regulatory environment, changes in taxation, expropriation or nationalization of property, civil strife, strikes, acts of war and insurrections” (BP Annual Report, 2011). BP needs to keep current on the political and economical stability of oil-producing countries in order to adjust operations if needed.

Pending lawsuits from Deepwater Oil Spill and other Incidents

BP has been involved in several safety and environmental incidents the past few years which present the company with numerous lawsuits stemming from their actions. BP’s latest

incident in the Gulf of Mexico presents several pending lawsuits by a wide variety of people and organizations throughout the region which may have substantial financial implications to the company. “BP’s potential liabilities resulting from pending and future claims, lawsuits, settlements and enforcement actions relating to the Gulf of Mexico oil spill, together with the potential cost and burdens of implementing remedies sought in the various proceedings, cannot be fully estimated at this time but they have had, and are expected to continue to have, a material adverse impact on the group’s business” (BP Annual Report, 2011).

Lawsuits are also still pending primarily with environmental groups from the 2005 BP Texas City refinery explosion. The lawsuits received additional attention shortly after the Deepwater Horizon oil spill in 2010. The pending lawsuits have the potential to add several hundreds of millions of dollars to BP’s expenses for years to come which may also trigger additional expenses for environmental compliance. “There is also significant uncertainty regarding potential changes in applicable regulations and the operating environment that may result from the Incident. These increase the risks to which the group is exposed and may cause our costs to increase. We recognized a pre-tax charge of \$40.9 billion in 2010 and a pre-tax credit of \$3.7 billion in 2011 as a result of the Incident” (Annual report, 2011).

6.3 Central Issue to Resolve

Based on the financial and SWOT analysis, BP appears to have leverage in gaining entry into new territories through their wide global presence, brand recognition, and rising demand for their products and services in developing countries throughout the world. BP also has leverage in meeting the world’s increasing demand for energy since the company is highly vertically integrated, focuses on R&D, and continues to develop and invest largely in alternative energies.

However, BP has some fundamental problems stemming from recent industrial incidents which have left a negative perception in the minds of the general public, environmental groups, and investors alike. The Deepwater Horizon oil spill presents mounting pressure on the industry regarding more controlled environmental regulations throughout the industry. The explosion in the Texas City refinery also presented negative public relations with groups and impacted the reputation of the company in a detrimental manner. Both of the incidents along with other pending matters present lawsuits that can easily drain the company financially and limit their operations if the verdicts are unfavorable for BP.

Given the recent troubles involved in the operations of BP facilities, the company needs to operate without any issues for several years to come in order to regain the trust and respect of many. Yet, BP is about to undertake an enormous risk as the Whiting Refinery Modernization Project (WRMP) comes to completion in late 2013 and is brought online. The WRMP represents a significant investment of over \$10 billion for the company in a refining division which has not proven to be a profitable segment of the oil and gas industry in the past few years as crude oil prices continue to increase. The WRMP will bring new technologies to the site which will need to coexist with a refinery that is over 100 years old. Any considerable incident during startup and initial operations of the unit which results in loss of life or environmental compliance violations may put the firm at risk of bankruptcy given the pending litigation from other events. BP will need to bring the WRMP online without any issues in order to regain the trust and respect of investors, environmental groups, and the general public along with bringing additional revenues to start paying off the enormous capital expense of the project.

Section 7: Analysis of Problem

After a thorough SWOT and financial ratio analysis of BP, a central issue to resolve emerged at the forefront of upcoming risks that can negatively affect the company. BP will be bringing a massive expansion project to completion in 2013 while integrating the new equipment and staffing with an existing refinery which is over 100 years old. BP has been involved in several tragic events during the past few years which have damaged their reputations with the general public, investors, and environmental groups alike. As a result of a recent catastrophic incident in the Gulf of Mexico, BP is not in a position to recover from another unfortunate event which may eventually lead the company to bankruptcy. A need for strategic alternatives to resolve the central problem is necessary in order for BP to successfully integrate the WRMP with the existing WBU without any detrimental events.

7.1 Development of Strategic Alternatives

The development of strategic alternatives to resolve BP's the central problem must incorporate a large number of analyses derived from a multitude of sources. BP must acknowledge their weaknesses and threats identified in the SWOT analysis and accept fundamental changes are needed throughout the organization to correct the issues. For the development of the strategic alternatives to resolve BP's central problem, analysis from key financial ratio analysis, external/internal environments, Porter's Five Forces, and BP's mission statement will be considered.

7.1.1 Development of Strategic Alternative Based on External/Internal Environment

As revealed in BP's external environment analysis, crude oil supply is a limited nonrenewable resource which is strictly regulated by OPEC and NOCs. As a result, the fluctuations in crude oil pricing are the leading factor for determining prices for end products

produced by BP. As the world continues to grow and develop, the increase in demand for petrochemical products is projected to increase as well. In order to take advantage of the growing energy needs around the world, BP is well positioned with a wide global presence to enter new markets such as the Canadian Oil Sands with the realization of the WRMP and benefit from additional new opportunities as they come up. The strategic alternative to resolve BP's central problem must take into account the tremendous opportunities in the near future and the need to continue operating without incident in order to gain the trust and respect from all the stakeholders.

The internal environment analysis reveals a company embattled with fundamental safety failures in part due to a poor organizational structure. In the past decade, BP started a vigorous marketing campaign to portray a safe and environmentally friendly firm. BP went as far as to suggest changing their name from BP- British Petroleum to BP - Beyond Petroleum in an effort to emphasize the diverse portfolio which included renewable energies. Unfortunately, BP over the past few years has experienced significant personal, process, and environmental safety events leading to the death of several employees and adverse effects to the environment. The incident at Prudhoe Bay involved oil pipeline leaks, the incident at Texas City refinery from 2005 was responsible for the death of 15 contract employees and the Deepwater Horizon incident from 2010 was responsible for the death of 11 employees as well as releasing millions of barrels of oil into the Gulf of Mexico.

The incidents have caused the government, general public, investors, business partners, and employees to lose confidence in the future performance of the firm. The organization is very vulnerable since they may not be able to survive one more significant incident. "BP's claims

relating to its corporate social responsibility (CSR) credentials have, increasingly, sat uneasily with the oil behemoths track record in terms of safety including—but by no means limited to—earlier safety transgressions in South Houston and in Alaska”(Balmer, Greyser, & Powell, 2011).

The strategic alternative should address BP’s weakness and threats which include a poor safety record by building on their strengths. The significant safety incidents of the recent years have made it clear that BP must change their safety culture in order to continue doing business.

7.1.2 Development of Strategic Alternative Based on Financial Analysis

The financial analysis of BP revealed several indicators that the company is still recovering from the Deepwater Horizon oil spill of 2010. “Just in financial terms, during 2010 and 2011 combined we made a pre-tax cash outlay of more than \$26 billion to cover oil spill response costs, meet claims and litigation expenses, support research, promote tourism and help restore the environment” (BP annual report, 2011). Based on the short-term and long-term solvency ratios of 2011 compared to 2010, it appears BP has stabilized the company and is starting to regain some of the market share it lost after the Deepwater Horizon oil spill.

Although BP has made significant progress in 2011, the company is still well below key financial industry ratios such as profit margin, price-earnings, and market-to-book value. The Deepwater Horizon oil spill put BP at risk of bankruptcy as millions and millions barrels of oil were released into the Gulf of Mexico. As a result, BP had to make considerable divestments to free up assets and capital in order to fund the relief efforts in the Gulf of Mexico. “Our \$38-billion divestment programme is strengthening the group’s financial position and focusing our portfolio” (BP annual report, 2011).

The strategic alternative must take into account the financial hardships absorbed by the company in the past two years and which will continue for the next several years as well. High risk ventures may not be the best alternatives with so much uncertainty pending from the litigation for the Deepwater Horizon oil spill. A strategic alternative must not put the company at further financial risk given BP's financial state and the continued efforts to stabilize the company for long-term solvency.

7.1.3 Development of Strategic Alternative Based on Porter's Five Forces Analysis

The analysis of BP using Porter's Five Forces model exposed two major factors affecting the company. BP conducts business in one of the largest and most competitive industries in the world. Entry into the industry is difficult due to the extensive large capital investment and elusive environmental permits required which promotes high level of competition within the existing companies in industry.

Porter's Five Forces analysis also identified the bargaining power of suppliers as being a significant driving force of the industry. With organizational cartels such as OPEC and National Oil Companies (NOCs) regulating a high percentage of the crude oil supply available to the market, suppliers have more bargaining power in the oil and gas industry than in most industries.

The strategic alternative solutions for BP should take into account the extreme driving force of the oil and gas industry identified by Porter's Five Force Model. While BP has suffered significant financial hardships in the past few years, the highly competitive industry will drive BP to continue pursuing new ventures in order to maintain and gain market share due to the scarcity and the heavy regulations imposed by external groups on crude oil supply. BP cannot

simply sit still and recover from their financial hardships without taking measures to sustain their short and long-term solvency with the high level of activity in the industry.

With so many determining factors affecting crude oil supply such as the state of the global economy and political stability, BP must continue to pursue new discoveries and secure additional oil reserves due to the limited supply of crude oil and fluctuating prices throughout the industry.

7.1.4 Strategic Alternative Based on BP's Mission Statement

BP is on the midst of stabilizing the company after a series of unfortunate catastrophic events over the past few years which have led to loss of life, violation of environmental compliance permits, and significant unexpected expenses for the company. BP has acknowledged their deficiencies and has sincerely started to make fundamental changes in the organization to resolve the root causes leading up to the events. Although BP does not advertise a specific mission statement, the company strives to meet the world's energy needs by providing a diverse line of products and services in a safe, environmental complaint, and reliable manner.

The strategic alternative based on BP's mission statement must align with the overall goals and objectives of the company if they are to be implemented, sustained, and supported throughout the organization. The strategic alternative must also support the three current determining principles to BP's business strategy which includes improving safety, regaining trust, and creating value for shareholders.

BP is making a considerable effort to improve safety throughout all their processes in order to prevent similar catastrophic incidents such as the Deepwater Horizon oil spill which impacted the lives of many people. Although safety comes at a big cost to the company, BP must place

safety first in their business strategy through recognition of the benefits from being a safe company. The strategic alternatives to resolve BP's central problem must have safety at the forefront if it is to be accepted by the organization.

7.2 Evaluation of Strategic Alternatives

The development of strategic alternatives are essential in creating solutions for problems encountered within organizations but a thorough evaluation process is needed beforehand to ensure the alternatives selected are setup for success when implemented. Strategic alternatives often require people to take action which makes ethical consideration crucial to the evaluation process. The alternative solutions must also align with the core values of the company and fit in with the cultural profile in order to be accepted, supported, and sustained throughout the organization.

7.2.1 Ethical Considerations

Business ethics offer a lot of room for interpretation since ethics are not well defined and cannot be applied universally by all organizations. Cheeseman (2009) defines ethics as, "a set of moral principle or values that governs the conduct of an individual or a group". Although there are several business ethic philosophies, neither has been adopted as the standard for organizations. As Maxwell (2007) states, "ethics cannot be categorized in our lives. People try to use one set of ethics for their professional life, another for their spiritual life and still another at home with their family. This gets them in trouble. Ethics is ethics. If we desire to be ethical, we live by one standard across the board". Being that ethics are defined at a high level involving different philosophies, ethics remains a metric that is hard to measure for corporations.

Business ethics are the roadmap of how an employee should conduct themselves during business activities. Several organizations set well defined ethics by establishing a code of conduct and mission statement along with beliefs and values. Along with these terms, a protocol on how to report any unethical activities is set. As Jehn, Terwel, & Vries (2012) proclaim, “many organizations offer their employees the opportunity to voice their opinions about work-related issues because of the positive consequences associated with offering such an opportunity”. Setting the right environment around business ethics allows employees to freely live up to the ethical requirements of the firm and report unethical violations. As Choi, Ki, & Lee (2012) note from their research, “practitioners working in firms with ethical parameters were significantly more likely to engage in ethical practices”.

Business ethics have also been greatly scrutinized in the past few years as a result of the determining factors of the economic downturn and the Deepwater Horizon oil spill. Although several billions of dollars were invested improperly and bad decision making created a hazardous environment, laws were not in place to punish the bad judgment of unethical Wall Street managers/investors or the individuals responsible for the bad decision making which resulted in the Deepwater Horizon oil spill. As Maxwell (2005) notes, “when personal convenience or getting results or winning or rationalizing our decisions or revenge is more important to us than doing what is right, we will act unethically when the going gets tough.”

Ramifications for the individual committing the unethical act may include employee termination, loss of respect, and loss of trust along with several other unfavorable factors. However, depending on the severity of the act, ramifications can be felt throughout the entire organization. A severe unethical act can also extend to the immediate community, involve

outside agencies, and attract additional attention from the public, news groups, and regulatory agencies such as the Deepwater Horizon oil spill.

Even with all the criticism BP has taken recently regarding their ethical considerations while conducting business, BP takes managing ethics and compliance very seriously. “BP has had a code of conduct for employees for many years, but decided some time ago that it was not adequate in the current climate, and that a more comprehensive programme was called for. In 2003 it hired an experienced compliance chief, Donna Boehme, to head a new department called Group Compliance and Ethics” (Following, 2005).

BP’s ethics and compliance policies implement the integrity strategy in the development of the code of conduct for the firm. The integrity strategy offers a true ethical standard based on the ethical principles of the employees and the firm which goes beyond the minimum legal compliance. Integrity strategies offer supporting guidance on what the right ethical actions are along with aligning ethical standards of the workforce and firm. BP’s ethic and compliance policies do not simply rely on existing laws and regulations but also take into account the management’s input on what is considered ethical. As Blodgett (2011) states, “while integrity-based ethics programs emphasize ethics values more than law or compliance, viewing ethics as being integrated with law may enhance understanding of an organization’s core values”.

BP recently updated the code of conduct for the organization in 2011 to incorporate new values in part due to the response to the Deepwater Horizon oil spill. “The code of conduct is aligned with our values and group standards, and clarifies the ethics and compliance expectations for everyone who works at BP. We updated our code in 2011 to incorporate our refreshed values and to align with new external requirements. The code reflects a values-based approach. Where

rules are not stated explicitly, our everyday business decisions are guided by our values” (Code of conduct, 2012).

As a response to all the turmoil with the company regarding ethics, BP continues to stress the importance of the new code of conduct and the need to act with high ethical and professionalism standards. “Everyone in BP has an obligation to uphold laws and the highest ethical standards reflected in our code of conduct. This is fundamental to the way BP operates. Everyone in BP is expected to follow our code of conduct and to speak up if they have questions, a concern or become aware of a possible violation” (Managing ethics, 2012).

BP needs to continue the pursuit of leading the industry in ethical and compliance. Given that BP conducts business in several countries where ethical considerations are not highly regarded, ethics and compliance remain a challenging task for BP.

7.2.2 Cultural Considerations

BP has overhauled their organizational culture several times throughout its history of extensive mergers and acquisitions. BP’s culture has also been affected by many transitional periods which include crude oil crises, joint ventures, and significant personal and process safety events. The recent events in the Gulf of Mexico involving the Deepwater Horizon oil spill has led BP to once again take a serious look at their organizational culture to re-evaluate their priorities regarding safety.

BP’s organizational culture is currently led by being progressive, responsible, innovative, and performance driven while promoting safety, people, and performance at all levels. “Our three priorities for the business are safety, people and performance – a strong and overwhelming commitment to support and develop our people, and drive BP to new standards of achievement”

(BP global – Careers, 2011). At BP, high levels of performance are sought by every member of the workforce. BP's culture is very rigid and formal focusing primarily on technical skills. "We demand technical leadership no matter what function you work in across the business, along with the ability to inspire and motivate those around you, whatever your level" (BP global – Careers, 2011). By using the behavioral approach, noted by Cummings and Worley (2009) as the "method of diagnosis which emphasizes the surface level of the organization culture – pattern of behaviors that produce business results", the organizational culture for BP is analyzed.

The cultural values or code of conduct as noted by BP focus on five primary areas: health, safety, security and environment (HSSE), employees, business partners, government and communities. "We are committed to the safety and development of our people and the communities and societies in which we operate. We aim for no accidents, no harm to people and no damage to the environment" (BP – Culture values, 2011).

As a result of the oil spill in the Gulf of Mexico, BP has a determined agenda to revamp their organizational culture to include safety over profits as the main driving force behind their operations around the world. Many, however, disagree with BP's renewed safety commitment by examining their past practices of recent years. Verschoor (2010) offers "the oil spill in the Gulf of Mexico once again shows that BP places cost and financial performance ahead of ethics and safety – despite the company's assertions that it emphasizes a culture of integrity and responsibility". Although much is publicized by BP regarding new safety initiatives, the firm continues to come up short on delivering on their safety metrics. BP advertised being a reformed firm demanding safety over performance in all operations after the tragic explosion at Texas City in 2005 which killed 15 contract employees. Yet, significant events continue to plague BP as

they move forward. “The problem is that there was a culture that did not promote safety and that culture failed. Leaders did not take serious risks seriously enough and did not identify a risk that proved to be fatal” (Investigators, 2010).

BP needs to change their safety culture immediately in order to survive in short and long-term. BP works in a volatile industry where the end products inherently are made to explode/combust in the end. There is significant risk management that needs to take place while discovering, removing, transporting, refining, and developing energy products. BP also needs to create a vision that places the importance of safety as the primary core value of the firm. The energy industry has proven to be very prosperous to firms and shareholders in the past few decades. The firm must establish a streamline risk management system that will eliminate certain risks associated in their operations. BP has been very aggressive in pursuing additional revenues through practices that have proven to be disastrous when they fail.

BP’s culture continues to revolve around safety and remains an internal weakness that needs to be addressed. BP is clearly not in a position to absorb another significant event similar to the Texas City explosion or the Deepwater Horizon oil spill without severe consequences to the company which may result in bankruptcy.

Section 8: Evaluation of Strategic Alternatives: Second Focus Area

The strategic alternatives to resolve BP’s critical issue impact several areas throughout the organization. While the first part of the evaluation of strategic alternatives focused primarily on management and leadership, the second focus area to address involves the organization development and change needed at the Whiting Business Unit (WBU) in order to resolve the

issues regarding the safety culture along with providing the proper organizational structure to integrate the Whiting Refinery Modernization Project (WRMP) with the WBU.

8.1 Organizational Development and Change

BP is one of the leading global energy companies in the world. BP has met the challenge year after year of meeting the world's ever growing need for energy by providing a diverse line of energy products and services. As a result of the continuing expansion into new territories, "BP has transformed: growing from a local oil company into a global energy group; employing over 80,000 people and operating in over 80 countries worldwide" (BP global, 2011). BP has always adapted well to change and used it to their advantage in order to continue economic growth within the industry. Now, more than ever, BP needs to make fundamental changes throughout the organization in order to recover from the catastrophic disaster of the Deepwater Horizon oil spill.

8.1.2 International Operations

With products and services offered in over 80 countries, BP faces many challenges doing business in a global environment. BP tailors their operations mainly as a result of the demand for specific energy needs (gasoline, lubricants, propane, etc.) around the world and the diverse government regulations. As Cheeseman (2009) notes, "environmental protection is becoming a more important issues internationally as countries become aware of the pollution of the air, water, and land". BP recognizes the distinct challenges presented in the global market along with the distinct environmental regulations and legalities in order to remain in compliance while providing a variety of energy products and services. Globalization has been a big part of BP's success in the past few decades and it appears to be here to stay for the long term along with the

many challenges it presents while doing business around the world. BP has embraced globalization and is determined to take advantage of the vast opportunities it presents. “Mobility is easier; countries and regions are more interdependent; communication across continents and oceans is immediate. Political and trade barriers are falling and the global banking system is more integrated than ever before. Talent knows few boundaries” (Environmental, 2000).

Yet, one of the most difficult challenges BP faces in a global environment involves the diverse groups of people and cultures around the world. It was made very evident BP continues to experience cultural differences after the Deepwater Horizon oil spill in the Gulf of Mexico. Days after the incident, the CEO was not prepared to talk about the events to the American public. The cultural differences were made very clear after several comments made by the CEO regarding the incidents were taken as ruthless by Americans. “Not giving enough details about his contingency plans and processes (we like processes in America) and not communicating often enough has angered the US public and legislators alike. Unlike the UK, silence means ‘nothing’s happening, we’re ignoring the problem’. Showing remorse is also an expectation of American stakeholders” (Stewart-Allen, 2010).

8.1.3 Integrated Strategic Change

BP was a stable firm generating record high revenues in the past decade but now faces many shifting goals in response to significant safety events which have depleted the firm from billions of dollars. BP now faces the overwhelming challenge to re-establish credibility in safety and financial performance with their shareholders along with the general public and various governments throughout the world.

BP recently announced it was downsizing the organization by selling off several billion dollars worth of assets to settle a substantial financial obligation as a result of the Deepwater Horizon oil spill in the Gulf of Mexico. BP announced the sale of two refineries in the U.S. along with several other assets expected to be released by the end of 2012. The plan to downsize was viewed as necessary in order to bring financial stability to the organization. The downsizing allows BP to sell off some of their underperforming assets which may hold tremendous value and opportunities for other organizations.

There are not too many organization that can successfully survive a ~\$40 billion liability by selling off assets and divesting in other parts of the organization. With the recent announcements, BP is attempting to offer stability, security, and confidence to the organization as well as to the shareholders by reinstating dividend payouts. The recent announcement to downsize the organization for the time being has made BP a smaller and more effective organization with increased flexibility. The changes will allow BP to re-evaluate the investment strategies and options in the short and long-term portfolio. The shift will also allow BP to directly invest in what it considers to be more valuable ventures worldwide. The decision to downsize appears to be successful since the organization is once again posting significant quarterly gains while making several acquisitions worldwide.

As a result of the enormous financial obligations from the Deepwater Horizon oil spill, BP started consolidating while minimizing high risk ventures. BP is not in a position where high value and high risk ventures can fail. Although there is tremendous pressure from shareholders to re-establish the financial performance before the Deepwater Horizon oil spill, BP should

primarily focus on cleaning up in the Gulf of Mexico, establishing a robust safety culture, and stabilizing the firm for long-term sustainability.

Yet, with the increase demand in energy and stricter environmental regulations throughout the world, BP being a global leader in the oil and gas industry has anticipated the increased demand for alternative energies throughout the world several years ago. Maxwell (2005) notes, “successful leaders see every situation in terms of available resources: money, raw materials, technology, and most important, people. Intuitive leaders can sense what’s happening among their people and almost instantly know their hopes fears, and concerns. Leaders also have the ability to step back from what’s happening and see not only where they and their people have gone, but also where they are headers”. As developing countries mature in their economies, more and more energy will be required stressing the already limited supplies of both oil and gas. In response to the changing environment, BP took the initiative to successfully transform from being a strictly oil and gas company to include alternative energies as part of the products and services offered worldwide. As Cummings & Worley (2009) note, “transformational change can occur in response to or in anticipation of major changes in the organization’s environment or technology. In addition, these changes often are associated with significant revision of the firm’s business strategy, which, in turn, may require modifying internal structures and processes as well as its corporate culture to support the new direction”. BP is heavily invested and continues to invest in developing alternative energies which include wind, biofuels, solar, and carbon capture and storage technologies but it may not be enough. As political, economical, and social uncertainties arise throughout the world, the availability of both oil and gas may be impacted greatly. Alternative energies have the potential for countries that otherwise do not have a secure

holding on oil and gas supplies to lessen their dependencies on foreign countries. “We believe renewable and alternative energy will make up an increasing share of the mix and we have therefore invested around \$4 billion since 2005 in low-carbon technologies with the potential to become material businesses for BP” (BP alternative, 2011). Maintaining a strong focus on alternative energies can provide BP the competitive advantage that differentiates the company from the oil and gas industry.

8.1.4 Transformational Change

BP as an organization needs to recognize and accept there are serious fundamental deficiencies with their safety culture in the firm. The organizational culture needs to change to embody the spirit of safety first. BP is very vulnerable to another incident which may cause the firm to go bankrupt. The organizational culture needs to change to embody the spirit of safety first at any cost. BP is currently an unstable organization as a result of the profound financial implications from the oil spill in the Gulf of Mexico. BP cannot afford another catastrophic event if they want to survive as a firm. Being in such a volatile industry, BP needs to embrace the safety culture as its means to survive. There are many situations daily at sites around the world that can lead to disastrous events for the firm. BP must adapt risk management in their culture to affect all operations to prevent future disasters similar to the Gulf of Mexico oil spill. “A safety culture must be led from the top and permeate a company, Reilly condemned the companies for operating under a "culture of complacency" and called for top-to-bottom reform” (Investigators, 2010). The safety initiative would need the support from the board of directors in order to be successful. As Cummings and Worley state “senior executives and administrators have to be strongly committed to the new values and need to create constant pressures for

change”. Several interventions would be needed first to introduce the concepts and also to continue the implementation. Upper level management at all global locations would need to be briefed on the new risk management concepts in order to implement and establish the new practices at their sites. An open communication system would need to be in place for the continued development of the cultural change.

BP must also realize that the strategic plan for long-term sustainability is no longer applicable. As a result of the billions of dollars set aside for the Gulf of Mexico oil spill, the firm needs to establish a new strategic plan to help stabilize the firm. BP already made announcements regarding the divestment in their U.S. refineries. BP in the next few years will be “reshaping our downstream business to better reflect the changing patterns of global energy demand, where growth is concentrated in emerging markets. One outcome of this strategy is our decision to divest some US-based businesses, notably the Texas City and Carson refineries” (Group chief, 2010). BP must continue to consolidate operations, minimize costs, and invest wisely in order to account for the long-term financial obligation from the Gulf of Mexico oil spill.

BP must look in the mirror and reset their priorities along with how they will be achieved. Their recent history is not what was projected for the firm and has led to a negative perception by their stakeholders. BP should also seek outside consultants to provide an unbiased view of the firm in regards to safety and performance. The past practices used by the firm have proven not to be sufficient in indentifying and eliminating serious risks in their operations.

BP also needs to continue living up to their commitment to re-develop and clean the areas affected by the Gulf of Mexico oil spill. They should also remain committed to assisting the

individual adversely affected by the event. ‘We are committed to live up to our commitments in the Gulf. We will also do everything necessary to ensure BP is a company that can be trusted by shareholders and communities around the world’ (BP annual, 2010). Trust needs to be re-established by BP with all the stakeholders and not just the shareholders. ‘‘We must show that we can be trusted to understand and manage our risks. And we must demonstrate that we respect the environment and the needs of local communities and society as a whole’’ (BP annual, 2010). Credibility will start to be regained if significant progress is seen at the Gulf of Mexico in the next few years. The commitment needs to be long-term and the restoration effort should remain BP’s focus for years to come.

The reason for change is obvious but it will need to be communicated properly along with the action plan to resolve the outstanding issues. Buy-in will be sought and approved by senior management to implement and sustain the changes. BP will need to establish a vision of being a safety conscious firm from the top down in their organization in order to correct the ongoing issues with safety. ‘‘A safety culture must be led from the top and permeate a company, Reilly condemned the companies for operating under a "culture of complacency" and called for top-to-bottom reform’’ (Investigators, 2010). The cultural change will require different ways and methods to correct the issues. One simple solution will not be effective in changing the safety culture. In planning and organizing the change, BP can take Maxwell’s (2005) recommendation; ‘‘we would do well to plan and organize as Moses did:

1. Plan to plan – Give time for planning and organizing.
2. Determine your primary purpose – What’s the big picture? What are we trying to do?
3. Assess the situation – Understand where you sit before trying to develop a strategy.

4. Prioritize the needs – Make sure the team agrees on the most important goals.
5. Ask the right questions – Ask about market, leadership, revenue, reporting, evaluation.
6. Set specific goals – Write goals that are realistic, measurable, and convictional.
7. Clarify and communicate – Communication links planning and implementation.
8. Identify possible obstacles – Mentally walk through all you are trying to pull off.
9. Have an open system approach to your planning – Be sympathetic to your environment.
10. Schedule everything you can – Get things on the calendar and set deadlines.
11. Budget everything you can – Determine both the costs and due dates of projects.
12. Monitor and correct – Progress is like a canoe trip; constantly adjust your course.
13. Study the results – Evaluation prevents stagnation and exaggeration.

Remember, anyone can steer the ship, but it takes a leader to chart the course.”

The firm needs to set a precedent of what good safety practices look like throughout the organization at all levels and hold people accountable to them. A new robust safety program needs to be developed and implemented with the appropriate discipline and reward structure. In the past, “in crude behaviorist terms, there were few rewards (or positive reinforcements) for outstanding performance and few penalties (or negative reinforcements) for failure” (Gardner, 2004).

The safety initiatives will need the support from the board of directors and senior executives in order to be successful. As Cummings and Worley (2009) state, “senior executives and administrators have to be strongly committed to the new values and need to create constant pressures for change”. Several interventions would be needed first to introduce the concepts and also to continue the implementation. Upper level management at all global locations would need

to be briefed on the new risk management concepts in order to implement and establish the new practices at their sites. An open communication system would need to be in place for the continued development of the cultural change. “If BP takes the right steps to reduce the fears of their people and to engage them in the process of revisiting their culture from the inside-out, then they will reap the benefits of having more than 100,000 brand ambassadors. Their employees and their culture could actually grow stronger as a result of this catastrophe” (Nelson, 2010). All employees should be asked to participate in implementing the changes needed involving risk management. “From their conscious culture, an aware, mobilized workforce could become a part of the story of BP’s turnaround” (Nelson, 2010).

BP has recently implemented a new Safety and Operational Risk (S&OR) program which according to BP “strengthens and clarifies requirements for safe, compliant, and reliable operations” (BP’s massive, 2011). The most significant change to the safety culture is not just forming additional groups to oversee safety and risk management in order to provide additional checks and balances. Those groups were supposedly already in place before the Deepwater Horizon oil spill.

The potential impacts from implementing risk management in their organizational culture have the potential to save the firm from bankruptcy. As a result of an ever-increasing competitive global market, BP continues to feel pressure to perform at high levels financially. Many investors are dependent on the dividends from BP as their income and demand high profits. BP needs to focus on stabilizing the firm while implementing a new organizational culture focused on risk management. The new concepts regarding risk management have the potential to actually increase profits since some ventures or operations which would otherwise

not be favorable to the firm would be stopped. If the proper risk management emphasis was firmly in place in the organizational culture of BP prior to the Gulf of Mexico incident, the oil spill could very well have been averted and many lives would have been spared. The same applies to the incident at Texas City in 2005. BP's organizational culture needs to change now in order to survive and regain credibility.

BP was one of the leading and prominent energy companies in the world until the Deepwater Horizon oil spill of 2010. Since then, the firm has undergone a dramatic change in structure throughout the organization at all levels. BP desperately needs organization development intervention to establish a clear plan to address the restoration efforts in the Gulf of Mexico, a new robust safety culture, and a plan to stabilize the firm for long term survival. Only after several years of achieving high metrics on safety and environmental compliance around the world will BP begin to establish credibility with their stakeholders and regain its title as one of the global leaders in the energy industry. The most significant cultural change BP needs to implement is driving safety as their top priority instead of production at any cost...and they must believe and live it each day in everything they do.

Section 9: Recommended Strategic Alternative

A thorough analysis of BP has identified a central problem that needs to be addressed; BP will be integrating the Whiting Refinery Modernization Project (WRMP) with the Whiting Business Unit (WBU) which is a significant high risk venture following the Deepwater Horizon oil spill. Being that BP is currently trying to recover from the financial hardships of several recent safety and environmental events, BP needs to ensure integrating the ~\$11 billion project into an existing refinery which is over 100 years old does not result in any additional negative

exposure to the company as a result of yet another catastrophic event. An additional disastrous event may eventually lead to the dismantling of the company being that BP would incur further unanticipated financial expenses along with the loss of their reputation and trust throughout the industry.

9.1.2 Strategic Fit with the BP's Mission

BP was a stable firm generating record high revenues in the past decade but now faces many shifting challenges in response to significant safety events which have depleted the firm from billions of dollars. BP is now in the pursuit of the overwhelming goal to re-establish credibility in safety and financial performance with their shareholders, the general public, and various governments throughout the world along with all their stakeholders. According to the BP Annual Report (2010), “the board set three priorities for BP. Safety must be enhanced and embedded. Trust must be regained. Value must be created through a clear strategic plan”.

The strategic alternative to make safety and environmental compliance the foundation of the WBU and WRMP culture fits all three priorities set out for BP which is embedded into their mission. With regards to safety, the WRMP brings new technology along with the lessons learned incorporated from previous unfortunate safety events. A focus on safety integrated control systems has been developed to prevent incidents similar to the Texas City explosion in 2005. Additional emergency shutdown logic has also been incorporated to prevent environmental releases of toxic gases to the atmosphere.

Successfully integrating the WRMP (~\$11 billion capital investment) into the WBU without any safety or environmental compliance violations will help BP earn back the trust from their investors, business partners, environmental groups, and the general public. The success

would be a clear indication of the amount of work accomplished internally at BP to correct fundamental issues with safety and environmental compliance from the past several years.

“More than \$1.4 billion of the refinery modernization program is allocated for environmental improvements. To reduce air emissions, BP is replacing existing equipment with more modern technology and installing emission controls on new and existing units. These controls include technology to produce lower sulfur fuels, specialized burners and controls to reduce nitrogen oxide emissions from heaters and boilers, sealing sources of particulate and volatile organic compound emissions and improved automated controls that optimize process units for lower emissions” (BP files, 2007).

Finally, a successful integration of the WRMP has the potential to be a significant financial driver for the downstream operations of the company and an overall big money maker. The WRMP will allow BP the flexibility to run heavy crude (when margins are right) and be able to capture significant market share. Typically, big profits made by oil companies are not a result of refining and marketing. The refining industry has experienced a significant level of contraction and has lost millions and millions in the past decade as a result of increased crude oil prices. Several refineries in the U.S. have either been shut down permanently or are in the process of being shut down in the near future due to escalating costs. The integration of the WRMP will allow the flexibility of refining cheap crude oil from the Canadian oil sands which will increase the profit maximization especially when margins are high (as other crude oil prices increase).

9.1.3 Strategic Fit to BP’s Strengths

The recommendation to improve the safety culture at the WBU and WRMP has the potential to benefit BP throughout the organization. Being that BP has a wide global presence,

the improvements accomplished at the WBU site has the potential to be adopted through the over 80 countries BP has a presence in. BP has a significant pool of safety specialists around the world which they can pull together to develop the most comprehensive safety initiative in the company's history. BP is also a highly vertically integrated company with operations throughout the hydrocarbon supply chain. BP is involved in discovering/extracting gas and oil though sell the product to the end users. BP can draw from specialist throughout the hydrocarbon supply chain to ensure a diverse cross-function team is available to assist in developing the safety initiative that can transform BP into the safety leader in the oil and gas industry. BP can share and utilize the improvements around safety within various segments BP operates in. Although safety may never be synonymous with the oil and gas industry, BP's improvements can illustrate the fundamental changes occurring within the industry. BP can also use their brand recognition to get buy-in from leading safety and environmental groups to help assist in developing their program to improve safety within the industry.

9.1.4 Strategic Fit to Avoid BP's Weaknesses

A considerable weakness which was identified through the SWOT analysis reveals a poor safety culture throughout the company along with a negative public perception of the company. BP has undertaken several initiatives in the past to improve safety metrics but has failed to deliver any substantial improvements time and time again. With all eyes on BP during these times of record high gas prices and stricter environmental regulations, BP needs to ensure the proper processes are in place at the WBU to prevent additional safety and environmental compliance deviations while integrating with the WRMP. It is clear that in order for BP to be successful in the high risk venture of integrating the WRMP, it must make safety and environmental compliance the

foundation of the WBU and WRMP culture. “As promised in August 2007, BP will operate the modernized refinery within the more stringent discharge limits for ammonia and suspended solids contained in the refinery's previous water discharge permit” (Whiting refinery, 2008).

By creating a culture at the WBU and WRMP with safety and environmental compliance as the main focal point, BP will be better prepared to integrate the WRMP without any significant incidents which may adversely impact the survival of the organization. BP will also have an opportunity to showcase the tremendous ongoing effort put in place to improve safety and start regaining trust from all their stakeholders by demonstrating they can deliver large scale projects associated with inherent high risk. “As we progress with the project, the health, safety and security of our employees, and of those who come into contact with our operations and products, remains our highest priority. Our policy is that no job is worth doing, unless it is done safely, while protecting our shared natural environment” (Whiting refinery, 2008). Once BP proves their processes have improved, BP will be able to take advantage of additional opportunities in the future.

BP has a lot riding on the WRMP project at the WBU. “BP has invested more in the United States over the last five years than any other oil and gas company. With more than \$52 billion in capital spending between 2007 and 2011, BP invests more in the U.S. than in any other country. The company is the nation’s second largest producer of oil and gas, a major oil refiner and a leader in alternative energy sources including wind power and biofuels. BP provides enough energy each year to light the entire country. With 23,000 U.S. employees, BP supports nearly a quarter of a million domestic jobs through its business activities” (BP reaches, 2012).

The ultimate success of the WRMP will be a milestone for the corporation signifying the vast improvement in the company from one of the most challenging times in BP's history.

9.1.5 Solution for the recommended Strategic Alternative

With so much at stake with the integration of the WRMP into the WBU, BP needs to ensure the proper safety processes are in place before considering to bring the project online. A significant level of communication is needed to integrate all the expansion pieces within the project together and ultimately integrate the entire project with the existing refinery. BP needs to develop and implement a robust safety culture which should be the foundation of the culture at the WBU and the WRMP. Failure to bring the project to completion and online safely can have adverse affects felt throughout the organization similar to the Texas City refinery explosion in 2005 and the Deepwater Horizon oil spill in 2010.

In order to raise the awareness and seriousness of the need to change the safety culture, the upper management at the WBU and WRMP need to be supportive of the initiative. Without the support of the upper management, a significant change in the safety culture is futile if the proper resources are not made readily available to support the effort.

In developing the robust safety culture, BP should incorporate best practices in the industry. The petrochemical industry has been around for several decades along with significant empirical data which supports best practices in the industry. BP must adapt the best practices in the industry in order to have a solid background to build a high level of safety into their culture.

BP must also apply lessons learned throughout the industry as well into the safety initiative in order to identify gaps in the existing policies and procedures. The fundamental process of refining crude oil has not changed in several years and significant data is available from previous

startups/shutdowns of units similar to the units being commissioned as part of the WRMP. By adapting lessons learned into the procedures and processes for integrating the WRMP, a repeat of past mistakes can be prevented that can set back the project even further than it already is.

The WBU and WRMP can also seek input from environmental and safety regulatory bodies such as IDEM, EPA, and OSHA to ensure the company is not missing anything prior to starting up new equipment which can be sensitive to the environment along with presenting additional working hazards as the end products produced in refineries are all meant to explode (combust) at some point in use. Having input from the experts is always desired when developing a high level of awareness and attitude around safety and environmental compliance.

Unfortunately, from past observations, all the previous initiatives around safety have fallen through due to a lack of concern and involvement by the majority of the workforce. In order to be effective, the new safety initiative needs to incorporate everyone to be successful. One area the majority of the workforce focuses on rather intensely is bonuses and raises. As a final measure to include in the safety initiative, safety and environmental compliance metrics should be incorporated as a measure of performance for everyone and not just upper management. In the past, the industry has not had success improving safety and environmental safety metrics not necessarily due to a lack of interest from the oil and gas companies but a lack of interest in the part of the employees since they had no real immediate or direct gain. Employees were not rewarded as a result of improving safety and environmental compliance yet they were not necessarily disciplined either. Safety and environmental compliance deviations were viewed as part of doing business in a highly volatile industry and not much energy was focused on making improvements in the past.

As a result of incidents such as the Deepwater Horizon oil spill, companies now have a clear understanding on the implications of what a disastrous event can have on the entire organization and the overall devastating consequences to the communities, families, and the organization as a result of not having the proper risk management oversight in place along with a strong safety culture. BP must ensure the entire workforce adapts the new safety culture before another devastating event which could have been prevented ends the livelihood of the company.

9.2 Financial Impact of the Recommended Strategic Alternative

The strategic alternative to make safety and environmental compliance the foundation of the WBU and WRMP culture will facilitate integrating the WRMP into the WBU without any safety or environmental compliance deviations. Through a thorough industry analysis and application of comprehensive managerial economics, BP recognized the potential of realizing an increase in crude oil production from the Canadian oil fields. As Keat & Young (2009) note, managerial economics are “the use of economic analysis to make business decisions involving the best use of a firm’s scarce resources”. The main driver for the WRMP project is the available vast oil sand fields of Canada which offer a less expensive crude oil feedstock (raw material) for the Whiting Business Unit. “The project will include construction of a new coker, a new crude distillation unit, a new gas oil hydrotreater, new sulfur recovery facilities, modernization of the refinery's water treating facilities and other environmental improvements” (WRMP, 2008). The WRMP will provide the refinery with a cheap feedstock for producing petrochemical end products for consumers resulting in increased revenues and profits especially when crude oil prices are elevated which appears to be short and long-term the trend in the industry.

BP has secured crude oil supplies from the Canadian oil sand fields in anticipation of bringing the WRMP online by the end of 2013. The expansion project will utilize a more secure source of raw material for the refinery which will assist in forecasting and meeting the ever-growing demand for petrochemical products in the region. As Krajewski, Ritzman, & Malhotra (2010) note, “forecasts are useful for both managing processes and managing supply chains. At the supply chain level, a firm needs forecasts to coordinate with its customers and suppliers. At the process level, output forecasts are needed to design the various processes throughout the organization, including identifying and dealing with in-house bottlenecks”. Accurate forecasts will allow the WBU to increase the level of efficiencies and effectiveness throughout the refinery by manipulating the amount of heavy crude oil processed in the refinery as opposed to light crude oil which carries a higher overall price.

The successful integration of the WRMP into the WBU will have a substantial increase in downstream revenues for BP. The project will allow BP to increase economies of scale by allowing increased production at the Whiting refinery. “When complete, the project will increase Whiting gasoline production by 1.7 million gallons a day and equip the refinery to process increased amounts of secure Canadian crude oil” (Whiting refinery, 2008).

The utilization of the Canadian oil sand will allow BP the flexibility to run different feedstock into the refinery along with assisting in negotiating future crude oil prices in the future. “Canadian heavy oil is critical to America's future energy security and the need for additional motor fuels. BP is committed to finding ways to achieve the important objectives of US energy security, increased gasoline supply, economic development and environmental stewardship” (BP files, 2007).

The WRMP expansion goes well beyond implications to the company alone. “This multi-billion dollar modernization project is the largest private-sector investment in Indiana history and ensures the Whiting Refinery will continue to provide fuel and jobs for the region for decades to come. In fact, we will be employing 10,000 BP and contractor staff on site this year” (BP reaches, 2012). The WRMP project will employ over 10,000 people at its peak and will maintain several thousand temporary and permanent jobs once the projects comes to full completion. “Far more significant is that the project will allow us to sustain the ongoing employment base that provides a livelihood to over 2000 families and delivers huge economic benefit to communities in northwest Indiana” (Whiting refinery, 2008).

9.2.1 Impact to BP’s Financial Ratios

Along with increasing the economies of scale for BP, the WRMP is employing a significant amount of people and also bringing economic growth to the region. “We estimate that direct local spending during construction, including salaries and wages for field craft will be in excess of \$2.5 billion” (Whiting refinery, 2008). Being that the project is well over the original budget of \$3.8 billion, the amount in salaries and wages is more than double the original forecast. All in all, “the Whiting Refinery Modernization Project has provided massive economic opportunities for businesses in Northwest Indiana, the broader Midwest and the nation as a whole. In addition to jobs, the project is generating significant indirect benefits for local and U.S. businesses. The project is contributing significantly to the tax base of local and federal governments for the funding of schools, environmental protection, and many other essential government services” (Whiting refinery, 2008).

By implementing the strategic alternative to make safety and environmental compliance the foundation of the WBU and WRMP culture, BP will facilitate integrating the WRMP into the WBU without any safety or environmental compliance deviations. BP will also increase overall production by over 1.7 millions of gallons a day of gasoline along with other petrochemical products. A significant increase in revenues and profits is expected once the project is completed and brought online to make products which will impact the bottom line for the organization. With a recorded revenue of \$375,517 million and net profits of \$29,097 in 2011, BP plans to continue utilizing their resources for profit maximization throughout all their market segments.

Although BP's short-term solvency (current ratio, quick ratio, and cash ratio) is slightly lower than the industry average, the recent financial hardships did not significantly affect the firm's ability to pay their bill in the short run. The WRMP project will provide additional revenue which will allow BP to increase short-term solvency to match the industry average if they chose to do so. However, BP's long-term solvency was impacted severely as a result of the Deepwater Horizon oil spill. Safely integrating the WRMP project will allow BP to continue recovering from the significant financial expenditures as a result of the recent safety and environmental incidents. BP's leverage ratios have improved from 2010 but are still well below the industry averages. The WRMP is part of BP's long-term strategic plan to meet the financial obligations in the long run which include the restoration efforts in the Gulf of Mexico. The anticipated increase in production, revenues, and availability of less expensive crude oil feedstock from the inclusion of the WRMP will increase the profit margin for the downstream segment of refining and marketing for BP. Currently, although BP appears to be utilizing their assets efficiently and effectively, the company is still feeling the effects of the catastrophic event

in the Gulf of Mexico. Profitability ratios are estimated to increase once the WRMP project comes online at full scale. Finally, the considerable capital investment associated with the WRMP is designed to ultimately increase market value for the firm. BP is currently struggling to recover to the previous market value levels it recorded before the Deepwater Horizon oil spill and has a substantial amount of work left before achieving those metrics. The safe integration of the WRMP into the WBU will allow BP to gradually increase market value by delivering increased value to shareholders.

9.3 Additional Financial Analysis of Recommended Strategic Alternative

With an original publicly announced price tag of \$3.8 billion dollars, the WRMP exceeded the budget at less than 50% completion. Several factors affected the original budgets which were not forecasted properly. The massive work scope for the project was too large for one engineering, procurement and construction (EPC) group to undertake on its own. Therefore, three separate EPCs (Jacobs Engineering, Foster Wheeler, & Fluor) were selected based on their competencies and their specialty areas. From the original announcement of the project to the time contracts were awarded to the EPCs, the economy was experiencing a significant economic growth period which placed labor and materials at a premium. As McEachern (2009) notes, “labor is the most important resource, accounting for about 70 percent of production cost. Nobody knows for sure how the price level will change during the life of the wage agreement, so labor contracts must be negotiated in terms of nominal wages”. Those two factors alone placed considerable allocations of additional funds which made the original budget seem unrealistic to meet.

The economic downturn following the short-lived prosperous times caused BP to shift priorities as the project was just getting off the ground. The industry was suffering through increased costs and decreased profits associated with the economic downturn which put the project on hold for several months as the industry adjusted to all the uncertainties. BP determined the opportunity cost, as noted by McEachern (2009) as “the value of the best alternative forgone when an item or activity is chosen”, associated with the project was too high to continue at the current pace and drew back significant funding. Although the engineering for the project continued to flow without any interruptions, significant costs were incurred for materials, warehousing, transportation costs, and delays to suppliers and skilled contractors. Costs continued to accumulate by the millions of dollars without much progress on the realization of the project.

Just when the industry and BP was regaining stability from the global economic recession, BP suffered a devastating safety and environmental event in the Gulf of Mexico which required adjusting the capital budgeting set for the WRMP expansion. As Keats and Young (2009) state, “firms face rising and falling phases of the business cycle. Although forecasting can help prepare a business for changes, it cannot predict timing and volatility of economic activity”. The Deepwater Horizon oil spill forced BP to reconsider the significant capital investment in the WRMP once again. With a project cost already more than double the original budget and the project close to being 50% complete, BP put the project on hold once again to focus on responding to the crisis at the Gulf of Mexico. At the time, the WRMP was not in a position to be able to utilize any part of the multi-billion dollar investment it had made. The project scope for the expansion worked simultaneously in which all upgraded areas would come online

roughly within a six-month period. A large investment was left collecting dust as the company struggled to survive the financial hardships incurred from the Deepwater Horizon oil spill.

BP was ~5 days from going into bankruptcy as a result of the Deepwater Horizon oil spill. With the financial uncertainties associated with the recovery efforts, BP made significant divestments within the corporation to stabilize the company. After several months of reassessing the company strategy, funds for the WRMP came back gradually. Delay after delay along with the uncertainties within the industry have resulted in the WRMP projected costs to exceed \$11 billion. Given that the project is still underway and given the steady fluctuations in petrochemical product prices, an accurate break-even analysis does not appear to be feasible. As Keat and Young (2009) note, “labor and material costs are subject to change, sometimes unexpectedly. Oil prices are an excellent example of such an uncertainty”. With such a considerable capital investment in a segment within the industry which produces low profit margins, BP is anxious once again to start reaping the benefits of the a large scale project. However, BP should learn from its past and take the appropriate measures to ensure the WRMP is integrated with safety at the forefront. By implementing the strategic alternative to make safety and environmental compliance the foundation of the WBU and WRMP culture, BP will facilitate integrating the WRMP into the WBU without any safety or environmental compliance deviations.

Section 10: Candidate’s Career Focus

Although my MBA will be completed much later in life than I expected, I am pleased to have waited several years after my undergraduate degree which has allowed me to gain a fundamental background in business to complete the program. The MBA program at IWU was

very challenging which also made it engaging and rewarding as well. The IWU program has given me the proper tools and skill sets needed to pursue higher level of responsibilities at work along with incorporating a Christian background.

The Christian values and beliefs I have been exposed to as a result of the MBA program at IWU will help guide me throughout my professional career and have already impacted my home life and spiritual life as well. The solid Christian foundation which the MBA program at IWU is based on will always serve as an example of how Christian values and beliefs can unify with the workplace.

Having already established a strong technical background through my undergraduate degree and work experience, completing the MBA program at IWU has enabled me to develop an equally notable business background. However, what I have gained the most from the MBA program at IWU is the fundamental Christian values and beliefs that can be incorporated in business decision and practices throughout my organization.

Finally, with the completion of the MBA program at IWU, I have become a much stronger leader with a heightened spiritual awareness. I am now prepared to make a significant impact to the organization overall success by applying the leadership traits of servant and transformational leadership styles discussed throughout the program along with the multitude of business concepts and theories in an ever-changing world. As long as I hold true to the Christian beliefs and values learned at IWU, I will have succeeded in business and in life.

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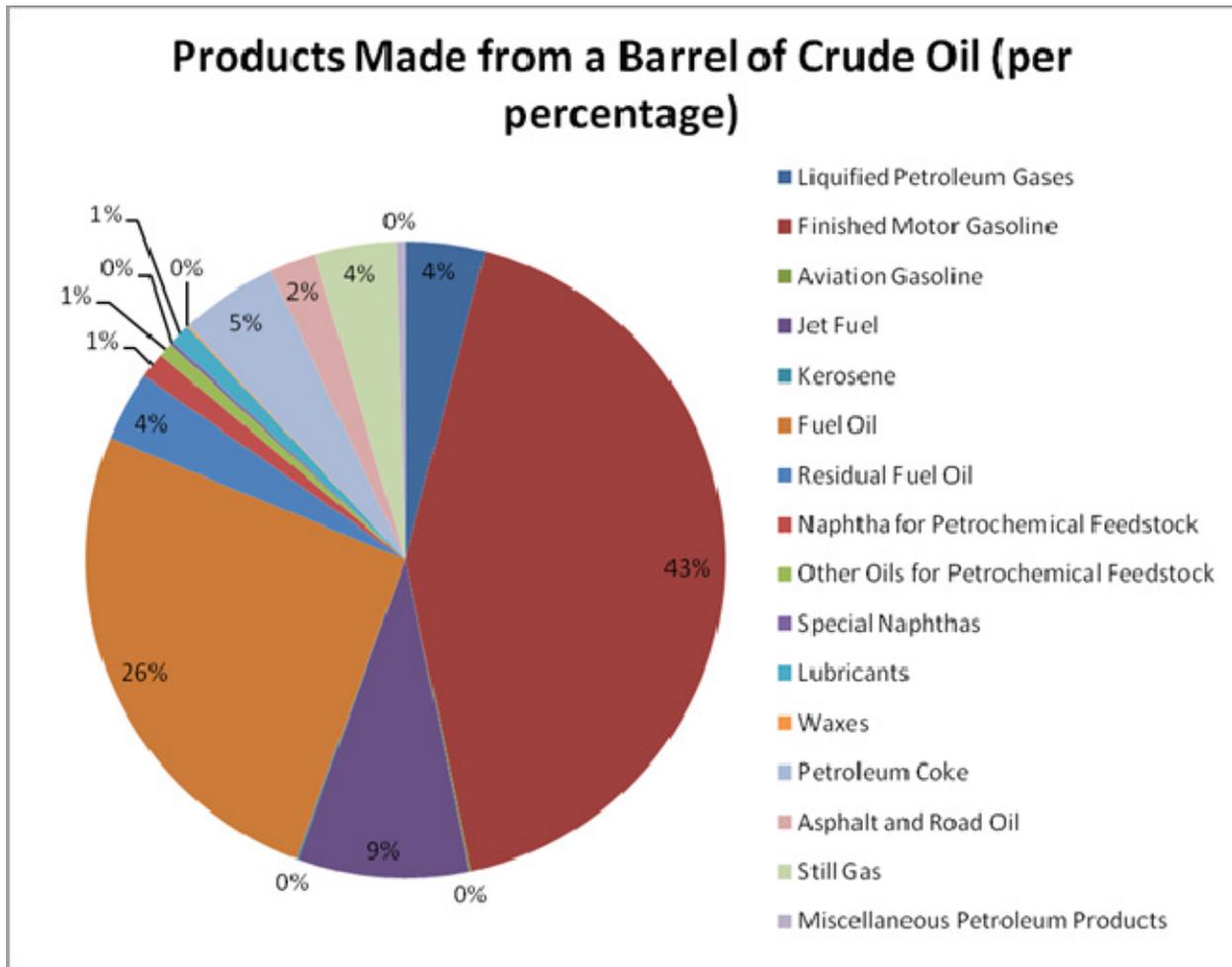
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Appendix A

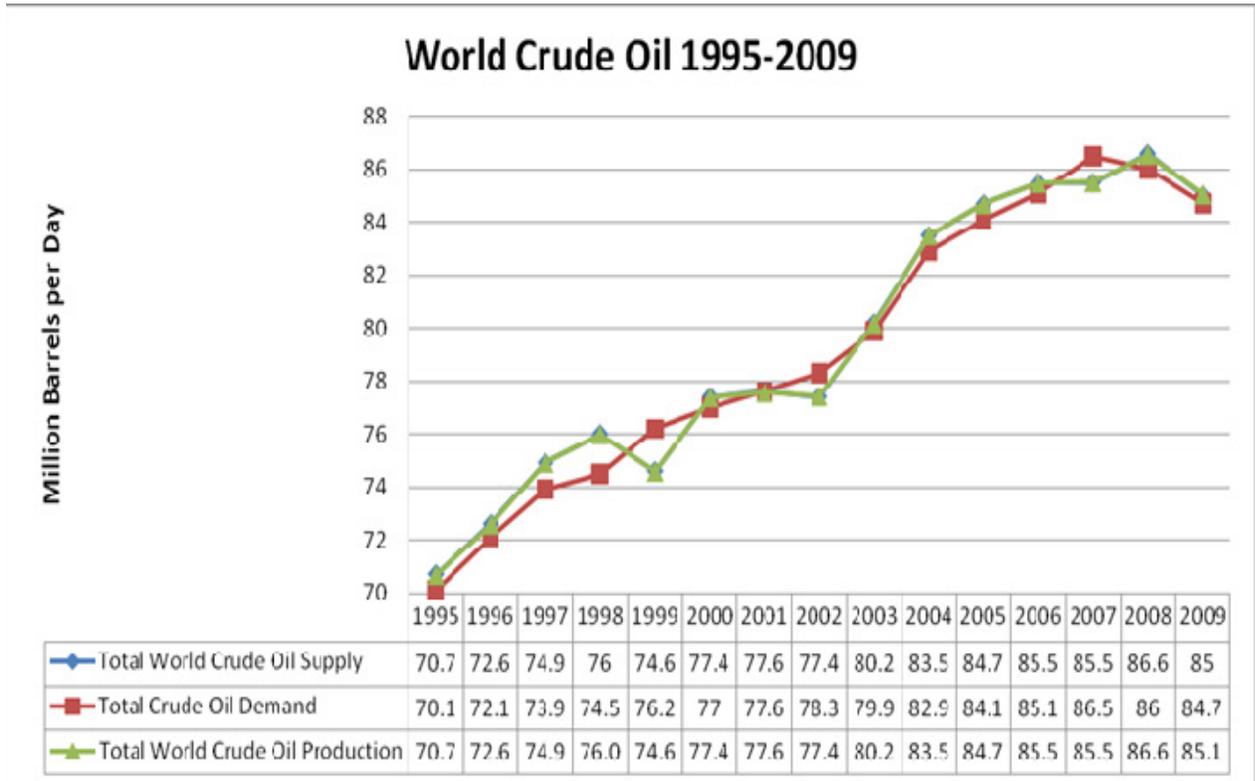
“Products made from a barrel of crude oil.”



Source: U.S. Refinery Yields, July 28, 2011

Appendix B

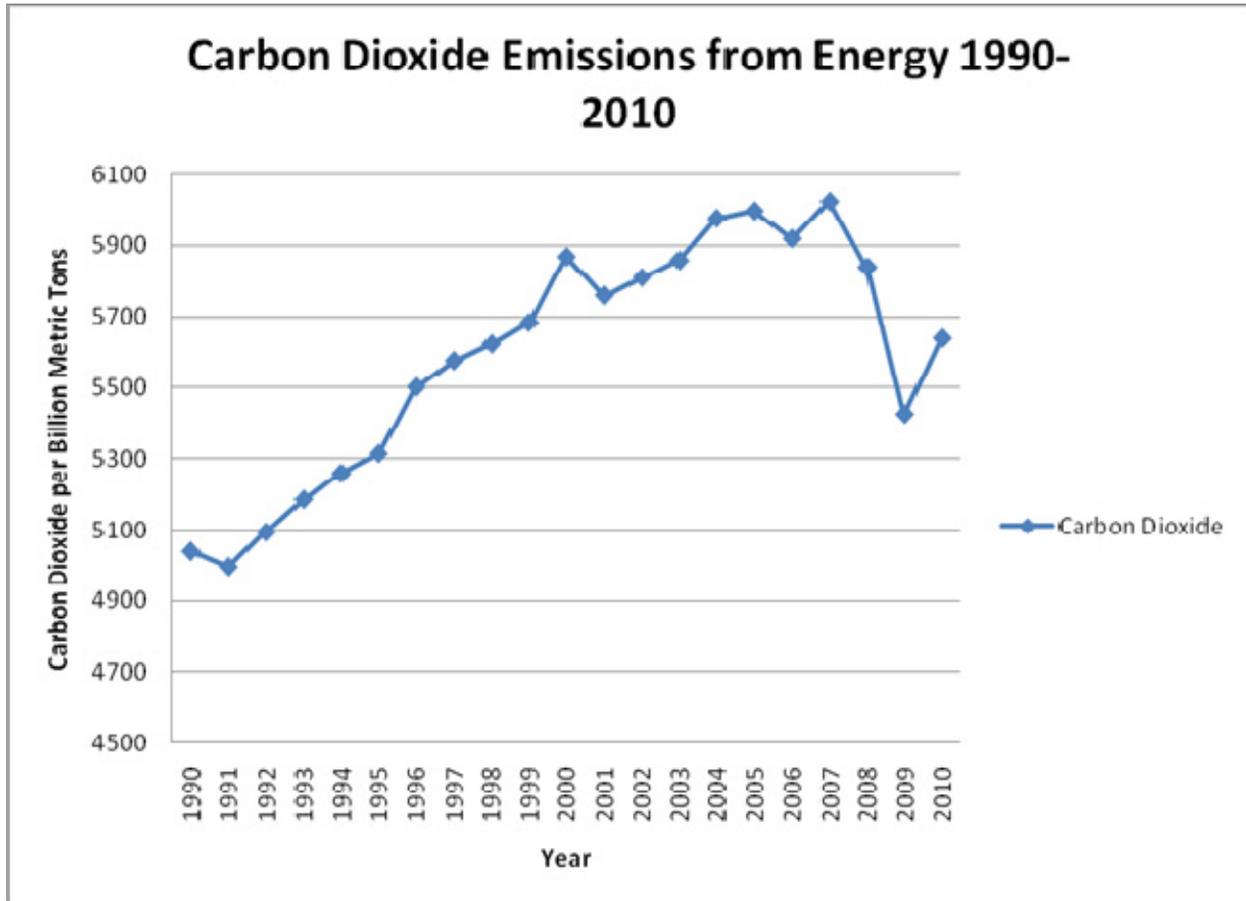
“World Crude Oil 1995 – 2009.”



Source: Oil market report, August 11, 2010

Appendix C

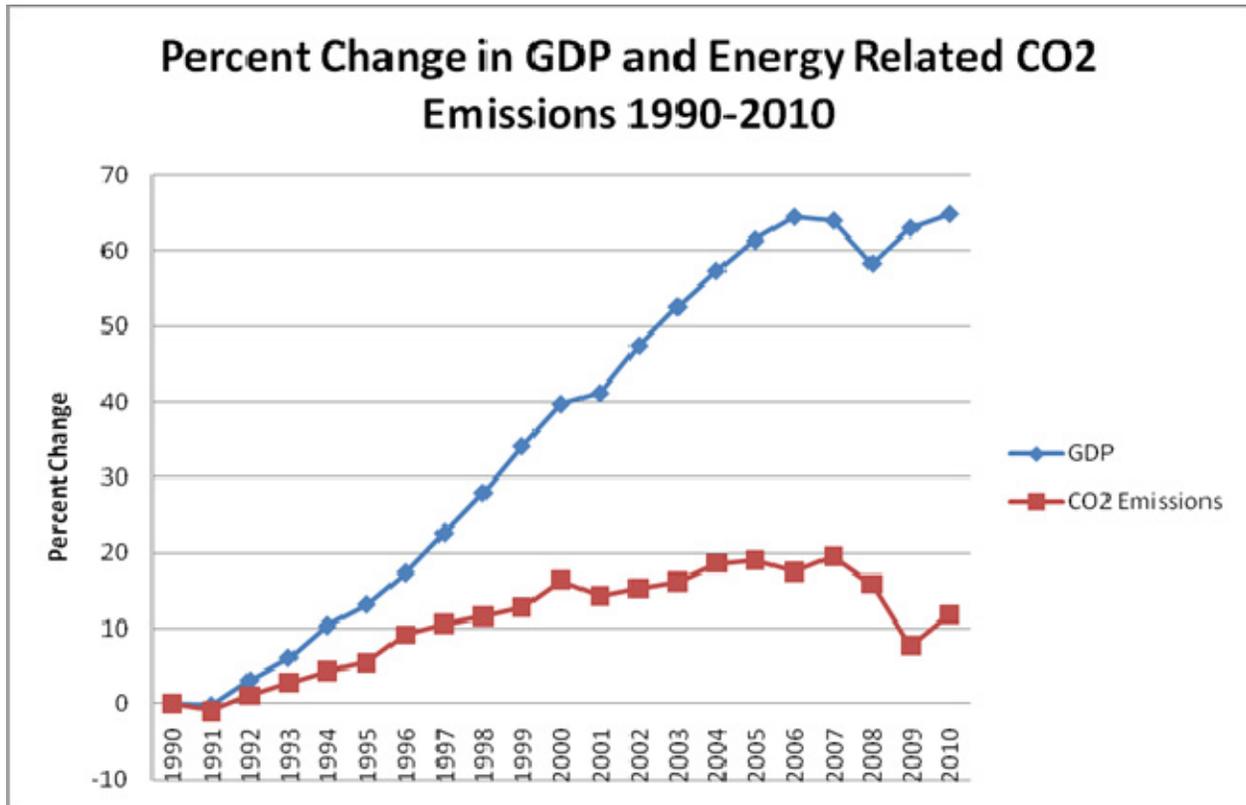
Carbon Dioxide Emissions from Energy 1990 – 2010



Source: U.S. energy-related carbon dioxide emissions, August 18, 2011

Appendix D

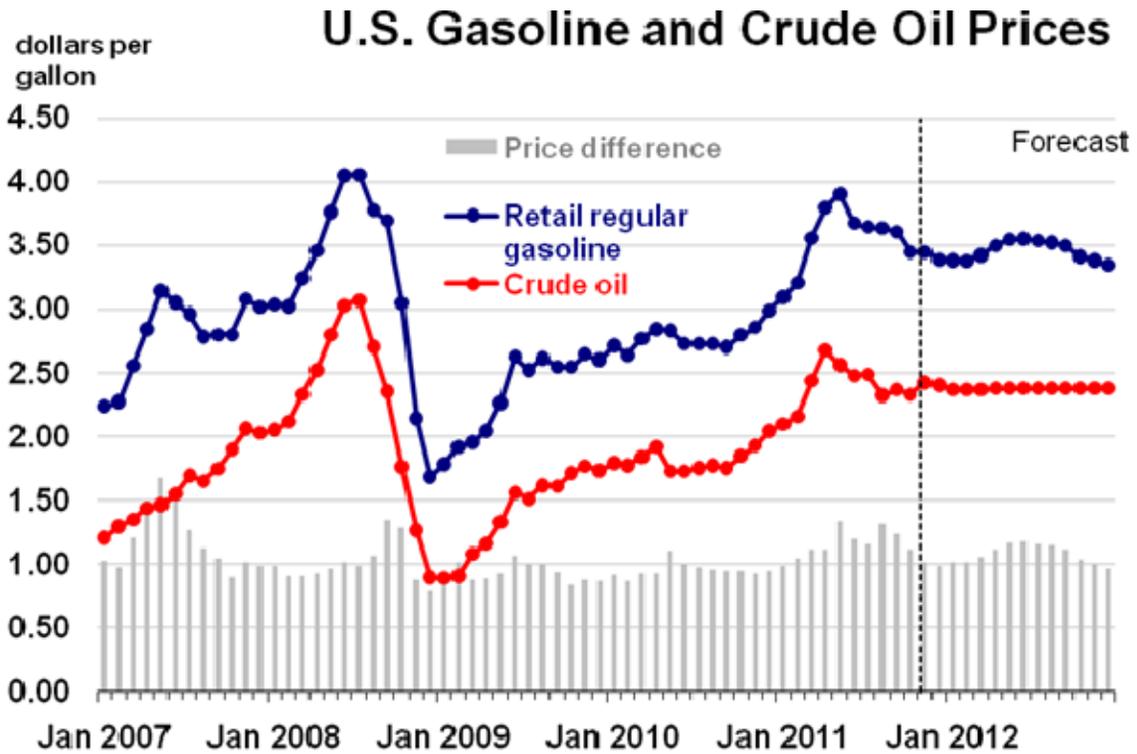
Percent Change in GDP and Energy Related CO2 Emissions 1990 – 2010



Source: U.S. energy-related carbon dioxide emissions, August 18, 2011

Appendix E

U.S. Gasoline and Crude Oil Prices



Crude oil price is average refiner acquisition cost. Retail prices include State and Federal
 Source: Short-Term Energy Outlook, November 2011



Appendix F

BP Key Financial Ratios

Date of Accounts	1/12/2011	31/12/2010	31/12/2009
Sales / Total Assets (%)	128.13	109.13	101.4
Sales / Fixed Assets (%)	3.15	2.7	2.21
Export / Sales (%)	74.92	78.86	78.61
Working Capital / Sales (%)	3.53	4.37	3.48
Sales / Stocks	14.63	11.33	10.58
Credit Period In Days (Trade Debtors / Sales) x 365	27.15	29.8	34.48
Current Assets / Current Liabilities	1.16	1.15	1.14
Quick Assets / Current Liabilities	0.85	0.84	0.76
Total Debt / Net Worth (%)	79.18	82.3	57.33
Shareholders Funds / Total Assets	0.38	0.35	0.43
Long Term Debt / Net Worth (%)	54.15	53.78	39.17
Interest / Pre Interest Profit (%)	8.24	-226.45	11.55
Current Liabilities / Stocks	3.29	3.2	2.62
Pretax Profit / Value Added (%)	61.64	-26.2	51.06
Value Added / Sales (%)	16.78	6.2	20.57
	11,044.6		
Sales / Audit Fees	2	8,488.77	6,836.34
Total Assets / Audit Fees	8,619.65	7,778.91	6,741.94
Creditors / Debtors	1.07	1.13	1.01
Total Debt / Working Capital	4.67	4.57	5.6
Total Debt / Total Assets	0.21	0.22	0.2

Finance Ratios by Lexis Nexis Academic (2012)

Appendix G

Petroleum Refining Key Financial Ratios

Company Size	All	Large	Medium	Small
<u>Quick Ratio</u>	1.4	1.41	1.09	1.07
<u>Current Ratio</u>	1.89	1.89	1.55	1.51
<u>Current Liabilities to Net Worth</u>	89.00%	88.60%	117.30%	149.00%
<u>Current Liabilities to Inventory</u>	x2.98	x2.98	x2.66	x2.77
<u>Total Debt to Net Worth</u>	x1.34	x1.33	x1.70	x2.14
<u>Fixed Assets to Net Worth</u>	x0.60	x0.59	x0.86	x0.88
<u>Days Accounts Receivable</u>	107	108	62	63
<u>Inventory Turnover</u>	x9.54	x9.54	x9.46	x9.85
<u>Total Assets to Sales</u>	75.90%	76.20%	57.80%	54.10%
<u>Working Capital to Sales</u>	25.60%	25.80%	13.90%	13.00%
<u>Accounts Payable to Sales</u>	12.40%	12.50%	10.00%	10.70%
<u>Pre-Tax Return on Sales</u>	2.00%	2.00%	2.10%	1.00%
<u>Pre-Tax Return on Assets</u>	2.60%	2.60%	3.60%	1.90%
<u>Pre-Tax Return on Net Worth</u>	6.00%	6.10%	9.70%	5.90%
<u>Interest Coverage</u>	x3.03	x3.09	x2.97	x2.21
<u>EBITDA to Sales</u>	3.50%	3.50%	4.10%	3.20%
<u>Capital Expenditures to Sales</u>	4.50%	4.50%	5.00%	4.60%

Financial Data by First Research (2012)

Appendix H

BP Income Statement 2011

For the year ended 31 December				\$ million
	Note	2011	2010	2009
Sales and other operating revenues	6	375,517	297,107	239,272
Earnings from jointly controlled entities – after interest and tax	24	1,304	1,175	1,286
Earnings from associates – after interest and tax	25	4,916	3,582	2,615
Interest and other income	7	596	681	792
Gains on sale of businesses and fixed assets	5	4,130	6,383	2,173
Total revenues and other income		386,463	308,928	246,138
Purchases	28	285,618	216,211	163,772
Production and manufacturing expenses ^a		24,145	64,615	23,202
Production and similar taxes	8	8,280	5,244	3,752
Depreciation, depletion and amortization	9	11,135	11,164	12,106
Impairment and losses on sale of businesses and fixed assets	5	2,058	1,689	2,333
Exploration expense	15	1,520	843	1,116
Distribution and administration expenses	11	13,958	12,555	14,038
Fair value (gain) loss on embedded derivatives	33	(68)	309	(607)
Profit (loss) before interest and taxation		39,817	(3,702)	26,426
Finance costs ^a	17	1,246	1,170	1,110
Net finance expense (income) relating to pensions and other post-retirement benefits	37	(263)	(47)	192
Profit (loss) before taxation		38,834	(4,825)	25,124
Taxation ^a	18	12,737	(1,501)	8,365
Profit (loss) for the year		26,097	(3,324)	16,759
Attributable to				
BP shareholders	39	25,700	(3,719)	16,578
Minority interest	39	397	395	181
		26,097	(3,324)	16,759
Earnings per share – cents				
Profit (loss) for the year attributable to BP shareholders				
Basic	20	135.93	(19.81)	88.49
Diluted	20	134.29	(19.81)	87.54

Source – BP Income Statement BP Annual Report (2012)

Appendix I

BP Balance Sheet 2011

	Note	2011	\$ million 2010 ^a
Non-current assets			
Property, plant and equipment	21	119,214	110,163
Goodwill	22	12,100	8,598
Intangible assets	23	21,102	14,298
Investments in jointly controlled entities	24	15,518	14,927
Investments in associates	25	13,291	13,335
Other investments	27	2,117	1,191
Fixed assets		183,342	162,512
Loans		884	894
Trade and other receivables	29	4,337	6,298
Derivative financial instruments	33	5,038	4,210
Prepayments		1,255	1,432
Deferred tax assets	18	611	528
Defined benefit pension plan surpluses	37	17	2,176
		195,484	178,050
Current assets			
Loans		244	247
Inventories	28	25,661	26,218
Trade and other receivables	29	43,526	36,549
Derivative financial instruments	33	3,857	4,356
Prepayments		1,286	1,574
Current tax receivable		235	693
Other investments	27	288	1,532
Cash and cash equivalents	30	14,067	18,556
		89,164	89,725
Assets classified as held for sale	4	8,420	4,487
		97,584	94,212
Total assets		293,068	272,262
Current liabilities			
Trade and other payables	32	52,405	46,329
Derivative financial instruments	33	3,220	3,856
Accruals		5,932	5,612
Finance debt	34	9,044	14,626
Current tax payable		1,941	2,920
Provisions	36	11,238	9,489
		83,780	82,832
Liabilities directly associated with assets classified as held for sale	4	538	1,047
		84,318	83,879
Non-current liabilities			
Other payables	32	3,437	14,285
Derivative financial instruments	33	3,773	3,677
Accruals		389	637
Finance debt	34	35,169	30,710
Deferred tax liabilities	18	15,078	10,908
Provisions	36	26,404	22,418
Defined benefit pension plan and other post-retirement benefit plan deficits	37	12,018	9,857
		96,268	92,492
Total liabilities		180,586	176,371
Net assets		112,482	95,891
Equity			
BP shareholders' equity	39	111,465	94,987
Minority interest	39	1,017	904

<u>Total equity</u>		39	112,482	95,891
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Source – BP Balance Sheet BP Annual Report (2012)