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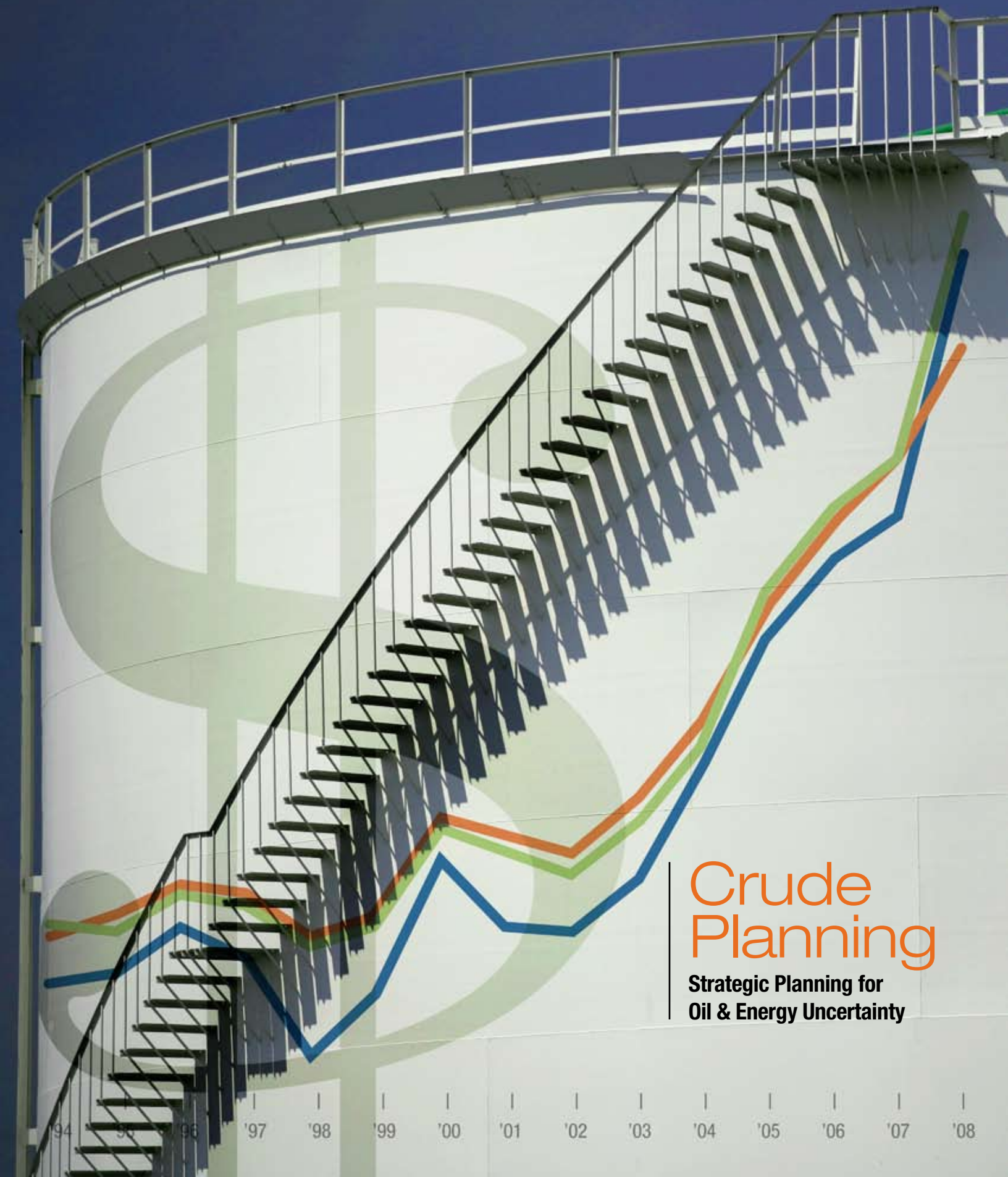

Crude Planning

Strategic Planning for Oil & Energy Uncertainty

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Executive Summary

Before the economic downturn, crude oil was on a predictable rise as demand grew across the globe. Emerging countries like Brazil, Russia, India, and China were booming while the U.S. and Europe remained consistent consumers of oil. Planning for energy costs wasn't complicated, but that was before the price of oil reached $147 a barrel. With oil prices fluctuating wildly, energy planning is riskier, and previously successful coping strategies – like hedging – are now more uncertain. Companies, especially consumer goods firms, need to understand the impacts of oil price fluctuations in order to plan for the effects they might have on their income statement.

While virtually no industry is immune to the effects of soaring oil prices, consumer goods companies feel the pain more than others because many of the products sold are elastic in nature. Fortunately, the impact to the revenue on consumer goods has been largely negligible due to companies making improvements in other areas of their organizations. Additionally, some consumer goods companies have been successful in reducing their dependence on oil to combat costs, while others have been intelligently adjusting prices to take advantage of oil price swings. Regardless of past successes, the consumer goods industry must continue to plan for fluctuating oil prices in order to maximize profit and minimize potential energy and oil price impacts.

The primary challenges associated with high energy and oil prices impacting consumer goods companies include:

- Reallocated consumer spending
- Increased costs, including transportation, raw material, and energy
- Detrimental regulations

A complete understanding of how oil and energy prices impact the income statement is critical to building a plan to pursue business enhancing energy initiatives. Industry leaders have already tackled significant energy-efficient projects, yielding results like:

- Reduce diesel fuel consumption by up to 4,000 gallons per truck;
- Lower carbon output by up to 100,000 cubic feet per year;
- Save up to 70% of energy needed to power a facility;
- Create up to 15% of a plant's electricity.

Understanding and addressing energy inefficiencies will help a company differentiate itself from its competitors and avoid future business disruptions due to fluctuating oil prices. Industry leaders will continuously reduce their internal costs and have plans in place to take advantage of future oil price fluctuations by responding quickly and effectively.

In order to alleviate the pressure of uncertain energy costs and create a more sustainable organization, consumer goods companies can follow a number of steps:

1. *Assess the impact of increased and volatile oil prices*
2. *Analyze the assessment for areas most affected by increased oil costs and missing information*
3. *Develop measures to track costs related to energy consumption*
4. *Document corporate energy guidelines*
5. *Set goals for energy cost reduction*
6. *Explore opportunities for energy investment*
7. *Invest in energy reducing projects*
8. *Track and monitor improvements*

Introduction

Over the past five years, crude oil prices have been extremely volatile. As recently as 1998, the price per barrel of oil was as low as $10. In December 2007, crude oil prices approached the $100 per barrel mark in the midst of geopolitical uncertainty. On February 19, 2008, the price of oil surpassed $100 and closed at $100.01 per-barrel, and, on July 11, 2008, oil reached a record $147.27 per barrel. By February 2009, the price had plummeted to below $40 per barrel. As of the printing of this report, oil prices are around $60 per barrel after falling about $13 a barrel since June 30. The future price of oil remains an unknown variable that challenges companies to beg the question: how do we plan for the uncertain cost of crude?

Given the widespread interest among our global consumer goods clients, we undertook this research to determine how companies can best prepare themselves and their budget and plan for this volatile commodity. The price of oil impacts consumer demand, raw material costs, transportation costs, and energy costs. While the increased cost of goods as a result of oil prices has an obvious impact on the bottom line, the impact oil prices have on consumer demand may be the biggest concern. Rising oil prices were instrumental in reallocating consumer income in 2008, further contributing to a rapidly plummeting demand for elastic consumer goods. Even as oil prices returned to below $40 a barrel, consumers did not return to their old habits. As oil prices trend upward, a quick return to the exuberant consumer spending that was previously enjoyed is unlikely.

Kraft, like many consumer goods companies, responded to cost increases by raising prices, but is now confronted with the issue of keeping consumers committed to their products to prevent them from trading down. Kraft has been forced to raise prices because of high costs for key ingredients like corn and oil; in the third quarter of 2008, input costs were up $700 million over 2007, and were expected to be up $2 billion in 2008 over 2007. Kraft is now focused on promoting its brands while finding ways to cut their own costs.[1]

Another significant oil price rise would mean higher manufacturing, distribution, and energy costs for companies. But are these factors something to worry about? From a consumer goods company's perspective, could these issues contribute to lower revenue and reduced profit margins? The answer may not be definite and the pressures created by volatile oil prices will vary from firm to firm. However, it is not difficult to say that the future progress and performance of companies would certainly differ between the ones that recognize, acknowledge, measure, and report the impact of oil prices from those who ignore it or are surprised by it.

What follows is an analysis of the impact of volatile oil prices to the US economy, with a focus on the consumer goods industry. The study includes pitfalls, initiatives, and tactics adopted by leading firms in consumer goods and other related industries to mitigate effects of the volatile cost of oil. The research is divided into the problem description followed by ideas for the solution. We have included numerous real world examples from innovative companies as part of the solution section.

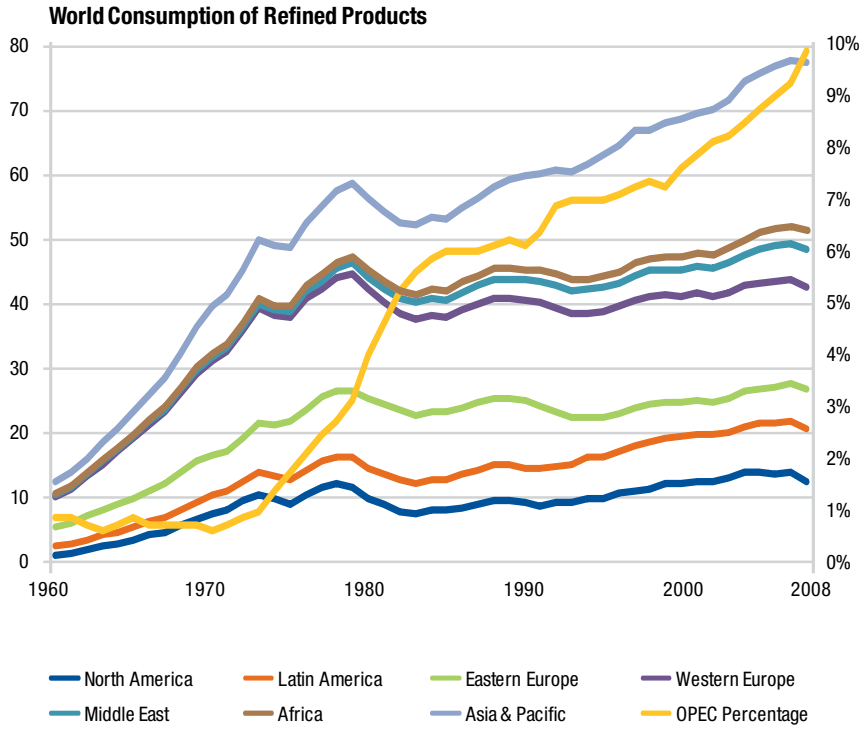
Objectives

- *Explore the impact of fluctuating oil prices on the revenue and costs of a global organization*
- *Discuss actions industry leaders can take to incorporate fluctuating oil prices into budgeting and planning*
- *Highlight examples and solutions from industry leaders.*

The Problem

Reasons behind the cause

One significant factor leading to the high oil prices seen in 2007 and 2008 was a surging demand across the globe. As demand from India, China and other developing nations increased, there was an additional strain placed on the already tight oil supply. For example, with China increasing its oil consumption by 7.5% a year (seven times faster than the US), the second largest oil consumer in the world is projected to increase its need for energy by 150% by 2020.[2] From 1960 to 2007, world demand for refined products grew from around 20 million barrels per day (mb/d) to just over 80



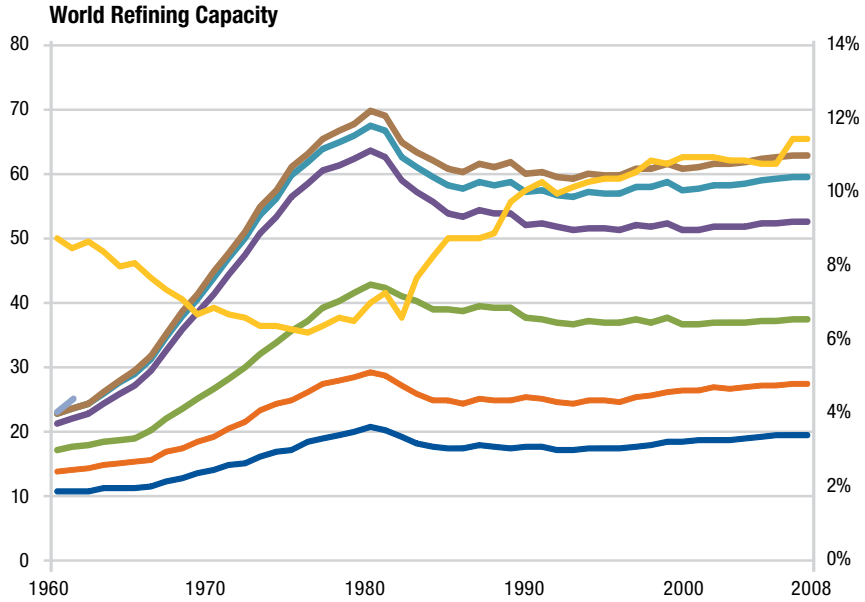


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Figure 1: World Consumption of Refined Products

Figure 2: World Refinery Capacity

Source: OPEC Annual Statistical Bulletin 2008

million barrels per day. Despite the increased demand, there has been little increase in world refining capacity since 1985. For example, capacity in the US has only increased by approximately 2 million barrels per day in that time period.[3] Growing demand coupled with a tight supply played a part in forcing the price of oil to record highs.

In 2009, oil supply and demand changed. Due to poor economic conditions worldwide, the demand for oil has stalled. In June 2009, the International Energy Agency (IEA) said that the demand contraction so far in 2008/2009, plus early signs of structural shifts, led to projections at least 3 mb/d lower for the outlook period than those generated in December 2008.[4] The US has seen a surplus of oil in the last several months evidenced by the approximately 30 super tankers waiting in the open ocean around the world serving as storage containers, along with the major US storage facility at Cushing, Oklahoma being filled to near capacity in January 2009. This surplus has added unexpected pricing pressures leading national oil companies and private trading companies to store oil with the intention of either decreasing supply or holding the oil until the price rebounds.[5] OPEC countries have recognized the surplus and have cut supply to shrink the overage in order to increase prices. As of March 2009, OPEC supply cuts were equal to roughly 3.3 mb/d.[6] While it is certain that demand will increase in the future, unexpected drops such as the one in 2008 combined with supply deviations will continue to contribute to the unstable price of oil.

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Other factors contributing to the volatility of oil prices include:

1. Political uncertainty - many oil producing nations, such as Iran, Iraq, Nigeria, Venezuela and Georgia, are under constant risk of terrorist attacks that could shorten oil supply.[7]
2. Natural disasters - Hurricane Katrina in 2005 caused nine US refineries to temporarily close down, reducing oil supplies by about 1.4 mb/d, or 8% of U.S. production.[8]
3. Speculation- The timing of a global economic recovery is an unpredictable challenge for economists, and even harder to predict for speculators who are “betting” on the recovery with oil. Speculation is a driving force behind price as the economy struggles to balance out, and also explains why supply shortages impact oil prices more than the shortage itself might.

Overall increasing demand, combined with the potential risks and oil speculation will continue the trend of unstable oil prices. Are market leaders ready to predict these variables, and are they able to quickly and effectively adapt to the drastic changes in the price of oil?

Will the price settle?

Many economists believe that oil at $100 per barrel or more is not likely in the near future. But actually, no one can be sure what the price of oil will be. In 2007, Saudi Arabia and Iran accounted for nearly 13 of the 32 million barrels a day produced by OPEC member nations.[9] The growing unpredictability surrounding Iran’s nuclear program and the possibility of an intervention by the US has led many to believe it is only a matter of time before something sparks a major conflict. If any of these countries were forced to cut supply, the price of oil would almost dramatically increase and may return to record levels. Another concern placing upward pressure on the price of oil is its limited availability. There are various predictions of when the world

will reach its peak oil production capacity, how long the existing reserves will last, and how much oil is left to be discovered, but all these concerns point to the fact that oil is a finite resource.

Even though immediate and long-term supply concerns are always present and can send the price upwards, strong pressures can also force the price of oil downwards. In December 2008, OPEC agreed to cut its production for the third time in as many months. This was an effort to stabilize the falling price of oil, but the price continued to slip. The record prices reached in the middle of 2008 changed consumer spending. Consumers cut back on elastic spending, decreased the amount they drove, and looked for ways to make use of alternative fuels. These factors, combined with the current economic situation, led to a significantly decreased demand for oil in the US. A similar decrease for demand was encountered worldwide.

As a result of the low demand for oil, OPEC decided in May 2009 to maintain current (reduced) levels of production, introducing the risk of a shortage if demand recovers quickly. During the recession, oil producers froze many production projects, limiting their ability to meet an increase in demand.[10] "As long as the market is excessively volatile, it is absolutely clear that existing reserves will not be developed rapidly enough to satisfy the expected demand" says Gazprom Chief Executive Alexei Miller.[11] If the economy recovers and the demand for oil increases accordingly, oil prices may spike again.

The long-term pattern for demand may be a little more predictable than recent patterns. The IEA predicts that by 2030, the world will experience steady average increases of 1% in the demand for crude oil year to year (an increase from 85 mb/d in 2007 to 106 mb/d in 2030).[12] With no good measure to predict how these demands will influence the price of oil in the future, it is critical to develop methods to measure and report the effect the volatile price of oil has on companies.

The impact to the US economy

Volatile oil prices have broad effects on the US economy. As oil prices increase, so do the price of gasoline and other petroleum-based products. Rising oil prices also act as an additional tax that the United States must pay. In 2007, the US imported roughly 3.6 billion barrels of crude oil, and, if the price of oil increases by $10 per barrel, then the US has to pay an additional $36 billion 'tax' or 0.32% of the gross domestic product (GDP).[13] On the other hand, oil price declines below expectations have a significant positive impact on the US economy. Many analysts predicted that oil would average around $105 a barrel in 2009, so various local governments and companies used a similar figure when budgeting for that year. While the price plunge is likely a reflection of the country in recession, price stabilization around $80 a barrel "will amount to essentially a $275 billion stimulus package to the US economy."[14] The lower the price of oil remains during 2009, the greater the amount of the stimulus.

Since early 2005, petroleum prices have risen faster than the demand for petroleum-based products, and the average amount of imports of energy-related petroleum products has decreased slightly. These factors have contributed to higher import costs. This further leads to an increase in the trade deficit, which has had a slightly negative impact on US GDP.

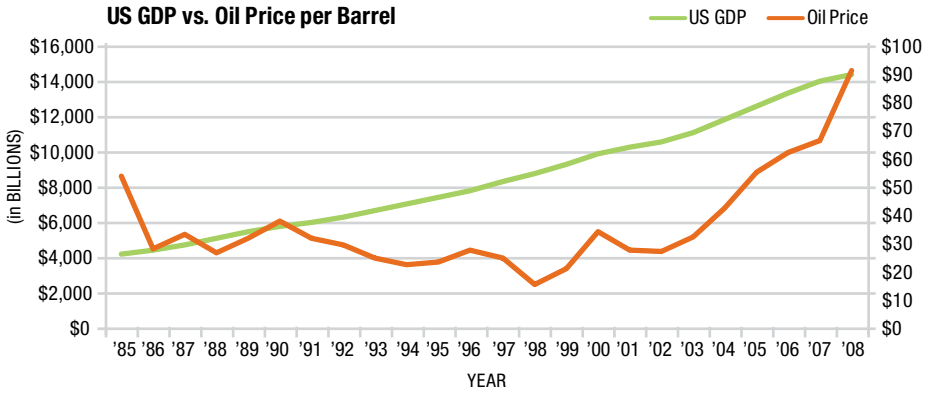

Figure 3: US GDP Compared with Oil Prices

Source: Bureau of Economic Analysis (2009)[15]; Energy Information Administration (2009)[16]; Clarkston Consulting analysis.

Effects on energy and non-fuel products

Since oil is a primary raw material in refined products, rising oil prices have broad effects reaching into every industry. Higher prices for a barrel of oil result in increased costs for raw materials used to make products such as plastics, carpets, rubber, and fertilizers. According to the British Plastics Federation, 4% of global oil production is used for plastics. Petroleum is used to produce the fiber for carpeting and fabric from polyester to nylon. Tire plants use petroleum to make synthetic rubber. Other industries use petroleum to produce drugs, detergent, deodorant, pesticides, paint, eyeglasses, heart valves, crayons and bubble gum. When the cost of oil goes up, raw material and production costs increase for these industries. In a PWC survey, industrial manufacturers reported in Q3 2008 that costs remained high- 66% experience increased costs, 14% decreased cost, for a net of 52% with higher costs. In response, 54% raised prices, 18% lowered them, for a net of 36% with higher prices.[17] As the price of oil dropped dramatically during the second half of 2008, the fourth quarter saw the upward spiral of cost finally settle and even decrease. During this time, 32% of US manufacturers reported lower cost as opposed to only 25% reporting an increase of cost. This correlated with 33% lowering prices during Q4 and only 15% raising prices.[18]

Energy prices are a significant component of manufacturing costs. Oil provides roughly 40% of the US's energy demands, with the remaining 60% being divided between other fossil fuels, nuclear, and renewable energy sources.[19] In addition, much of the machinery in many manufacturing plants is outdated and inefficient. Companies are reluctant to upgrade due to the significant capital expenditure and manufacturing disruptions caused by replacing old machines. Another reason is that many companies do not track energy consumption and therefore do not fully understand the inefficiency of their equipment. Energy consumption combined with raw material cost make up the largest cost to manufacturing facilities. In order to be prepared for the extreme variation in these costs, companies should use product lifecycle management tools to closely monitor the items they manufacture.

The impact on the consumer goods industry

Financial impact on CP companies

The price of oil affects the revenue of consumer goods companies in different ways. Companies that plan well can maintain or grow margins when oil costs rise, while

The Impact to the European and BRIC Economies

The impact of the fluctuating oil prices to Europe, Brazil, Russia, India, and China are largely determined by the production capabilities or lack of oil deposits. Brazil and Russia are both oil producing countries that export a portion of their production. Lower consumer demand and cheaper costs of oil are both negatively impacting these countries, slowing their economic development. A rebound in the demand for oil would benefit both countries, allowing them to invest more in the production of oil and increase their GDP through exports. Russia has targeted a price of about $75 per barrel as the right threshold amount to spur investment.[20] *Brazil, having discovered significant oil deposits in the past two years, also is hoping for a better premium on oil to attract investors.*[21]

Europe, India, and China are all impacted by the fluctuating oil prices much like the U.S. due to their dependence on imported oil. The spike in oil prices and subsequent drop in demand fueled the economic downturn worldwide. If oil prices continue to climb, Europe, India, and China will face a steep road to recovery.

organizations that aren't prepared are going to be faced with shrinking margins as many production costs increase. Fortunately, most consumer goods companies have been able to overcome costs, maintain margins, and continue positive revenue growth, despite rising oil prices. Federal Reserve Chairman Ben Bernanke and former Federal Reserve Chairman Alan Greenspan have stated that the primary reason the impact of high oil prices has been minimal to revenue is due to businesses continuing to increase productivity and efficiency.[22] When these productivity and efficiency gains were not enough to maintain margins and it was no longer feasible to simply absorb the cost, companies looked to raise prices. This was carefully done because of the elasticity of many products and the tendency of consumers to change brands or buy private label if it proved to be cheaper.

The fact that revenues have increased in the past does not mean the consumer products industry is immune to the underlying effects of the price fluctuations in the price of oil. The cost to produce many products is tied directly to oil prices because the consumer products industry uses oil-based raw materials in manufacturing, requires energy to manufacture, and has oil-related transportation costs associated with putting their products onto retail shelves. The consumer products industry also is impacted by the high cost of oil because it reduces the disposable income available to consumers and influences how they spend. While virtually no company is immune to the effects of soaring oil prices, the consumer goods industry feels the pain more than others because many of the products sold are elastic in nature.

Rising oil prices have the most visible effect through higher gasoline prices. As an example, US consumers paid $413 billion on gasoline and other energy goods in 2008, $280 billion more than in 1998.[23] This effectively took $280 billion out of consumers' discretionary income. Historically, consumers have spent most of their discretionary income on luxury goods and services that are not really part of staple consumer goods spending. With a reduced spending pool, consumers are either looking at cheaper alternatives or making do with less.

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Raw material costs and energy

Many consumer goods companies who rely on bottling or packaging took a major hit as the price of oil quickly rose since petroleum is the main component of plastic.

- More than 80% of sales for Pactiv Corporation are from products made from different types of plastics. As a result, Pactiv reported a $38 million decline in spread (difference between selling prices and raw material costs) that impacted their operating income in 2007 over 2006.[24]
- Similarly, in 2009, P&G expects raw material costs to increase by $3 billion.[25]

High oil prices also mean higher energy costs from manufacturing. Many organizations are seeing large increases in both raw materials and energy from year to year as oil prices increase.

- Kimberly-Clark experienced an increase of $75 million in raw material costs other than fiber, primarily polymer resins and other oil-based materials, and $35 million in energy costs in the fourth quarter of 2008 when compared to the fourth quarter of 2007.[26]
- First-quarter costs for raw materials and energy rose $50 million from 2006 to 2007 for Eastman Chemical.[27]

Shipping and transportation costs

As the price of oil remains unstable, consumer goods companies will continue to experience unpredictable shipping and transportation costs from the cost of oil and more specifically diesel fuel. In July 2008, diesel prices hit an all time high, settling above $4.70 per gallon for several weeks.[28] Oil prices directly impact logistics costs; from 2005 to 2008, every one-dollar rise in world oil prices has fed directly into a 1% rise in transportation costs.[29]

Many logistics providers use fuel surcharges, which furthers the impact of higher oil prices on some consumer product companies that use their services. FedEx and UPS both use fuel surcharges based on an index of fuel prices and will raise the fuel surcharge cost to their customers to offset their increased costs.[30]

Discretionary income and consumer behavior

Consumers are affected differently by the rise in gas prices based on their household income. In 2007, individuals with yearly household incomes greater than $70,000 had an average household income of $130,455 and average discretionary income of $90,739 (income after taxes minus food, shelter, utilities, and clothing). Households that made $20,000 to $29,999 in 2007 had a discretionary income of only $10,418. Gasoline expenditures were 3.8% of discretionary income for households with income greater than $70,000, but 16.3% for the $20,000 to $29,999 group.[33]

Wal-Mart, where 70.2% of its shoppers have yearly household incomes less than $70,000, presents a good example of the impact on the lower income group.[35] (Wal-Mart's immense size lets it act as a proxy for economic activity.) In April 2007, Wal-Mart saw same store sales decline 3.5% compared to April 2006, making it the worst month for the company in over 28 years.[36] Since that time, Wal-Mart has been able to adjust their course and recorded record sales of $374.5 billion, an 8.6% increase in sales over the previous fiscal year in 2008. In order to rebound and achieve this success, Wal-Mart emphasized its low prices and continued to establish itself as a one-stop place to shop.[37] This strategy supported consumers' efforts to drive less because they did not have to visit as many stores to purchase everything they needed. Consumers have also given more consideration to buying in bulk and shopping at local stores to reduce gasoline consumption.

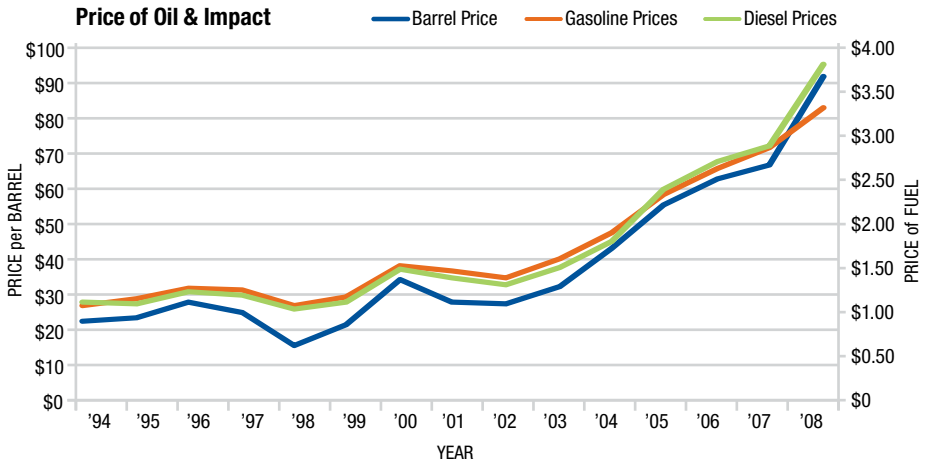

Figure 4: Average Annual Oil Prices, U.S. Gasoline Prices, and U.S. Diesel Prices

Source: Energy Information Association (2009)[16], [31], [32]

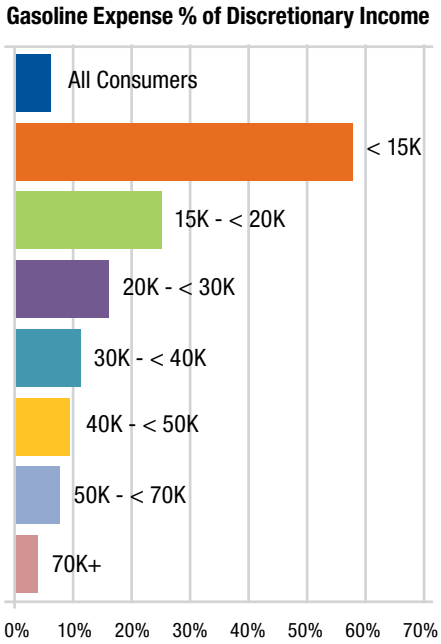

Figure 5: Gasoline Expense compared to Discretionary Income (Average cost of gas in 2007 was 2.85[34])

Source: US Department of Labor: Bureau of Labor Statistics (2009); Clarkston Consulting Analysis[35]

On October 31, 2008, the Wall Street Journal reported that "the broad measure of the economy, gross domestic product, fell a seasonally adjusted 0.3% annual rate in the third quarter, the Commerce Department reported Thursday [Oct 30, 2008]. Consumer spending turned in the weakest performance in 28 years during the July-September period."[38] The weakened economy is a significant force, but oil prices also contributed. High oil prices further reduce discretionary income and have assisted in influencing consumers to give more importance to value pricing in their products. Thus, the value proposition behind firms such as Costco and Wal-Mart is reaching a wider audience.

The reallocation of discretionary income when gas prices are high negatively impacts the consumer products industry. Since gasoline has a relatively inelastic demand curve (gas is a necessity for most people and has few substitutes), consumers will continue to purchase gasoline regardless of the cost, and look to cut costs in other ways. However, most consumer goods have an elastic demand curve, and therefore consumption will react strongly to price increases. Consumers will purchase their clothing, stereos, food, or shampoo from the lowest-price-provider because they have less discretionary income.

The impact oil prices have on the consumer can be categorized as first order and second order effects. The first order effect is the declining number of trips to the store as consumers attempt to save gas money. In November, 2008, Nielsen reported that trips to retailers declined 2.9% compared to November, 2007. Second order effects include consumers hunting for deals, increasing coupon redemption and switching to private labels in order to save money to pay for gas. Low prices were the consumer's primary objective during November 2008, evident by the fact that the only retail channels to post year-over-year increases in trip growth rates were:

- Dollar stores (+6%)
- Online retailers (+4%)
- Supercenters (+2%)
- Club stores (+1%)

Coupon activity in the year ending April 2008 jumped by 10.2% as consumers focused on cost savings.[40] Cost pressures stemming from oil prices and the down economy also swayed consumers to try private label products, and once consumers accepted the private products they stayed with them. Private label products maintained a steady 10% growth in terms of dollar sales in October 2008 – a trend that was constant throughout the year. The overall sales growth for branded products was not so fortunate during the same time period, slipping to 2% - down from 3% during the 52-week period ending November 1, 2008.[39]

2009 data so far has not demonstrated a change in the trends from 2008. February 2009 results continued the eight month decline in unit sales (average -2.6%) across fast moving consumer goods as consumers continued to cut back on shopping trips in the U.S.[41] The uncertain economy and fluctuating oil prices made consumers uneasy about spending and they continued their low-cost habits despite lower gas prices at the time. Recent data also suggests that consumers continue to look for cheaper products regardless of branding. In June 2009, U.S. store brand growth was up 19% or $13.6 billion versus just two years prior.[42]

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The Solution

Flipping the switch on energy costs: How to make a change

Visionary leaders will need to keenly track their product sales with regards to oil and energy costs in order to make proactive decisions about their future offerings. According to the Conference Board mid-market report entitled *Stopping the Profit Drain From Higher Energy Costs,* CEOs often delegate the responsibility of assessing and maintaining energy costs to other parties (like plant managers). "CEOs know the labor costs in the product. They know the cost of material in the product, they know their healthcare costs and their scrap costs. But, unless they've looked at their natural gas or electrical bills lately, they very often regard energy costs as insignificant and not worthy of attention as a regular management discipline."[43] Moreover, many financial executives invest little time in learning about energy management as a means of reducing operational expenses for their firm.[44] Thus, recognizing and attacking the distribution of energy costs is where decision makers need to start in order to move towards determining the needs and budgets for energy efficiency.

Motivated executives can begin transforming their company into an evolutionary firm with regards to energy by doing the following:

1. Assess the impact of volatile oil prices
2. Analyze the assessment for areas most affected by increased oil costs and missing information
3. Develop measures to track costs related to energy consumption
4. Document corporate energy guidelines
5. Set goals for energy or cost reduction
6. Explore opportunities for energy investment
7. Invest in energy reducing projects
8. Track and monitor improvements

1. Assess Oil Impacts

Making a change to reduce energy consumption must start with a clear understanding of how oil and other energy costs are affecting revenue. Some companies may have a general understanding, but how many companies track energy consumption at a detailed level? Does the company know the energy cost per unit (ECPU), the associated energy costs required to produce a single finished product? An assessment of the company's energy usage will help create an initial energy profile that documents the current energy policy and position. The profile should provide insights into how energy is accounted for in planning activities and how energy costs impact different aspects of the business. A serious assessment can provide an idea of the type of return on investment a company could expect from energy-related improvements.

What if you could…

- *Obtain savings up to $900 million a year by hedging fuel costs*
- *Cut energy costs by as much as 30%*
- *Reduce transportation costs by as much as $25 million a year by understanding and addressing energy in your company?*

Some companies have done just that. This section will review the strategy and sample results.

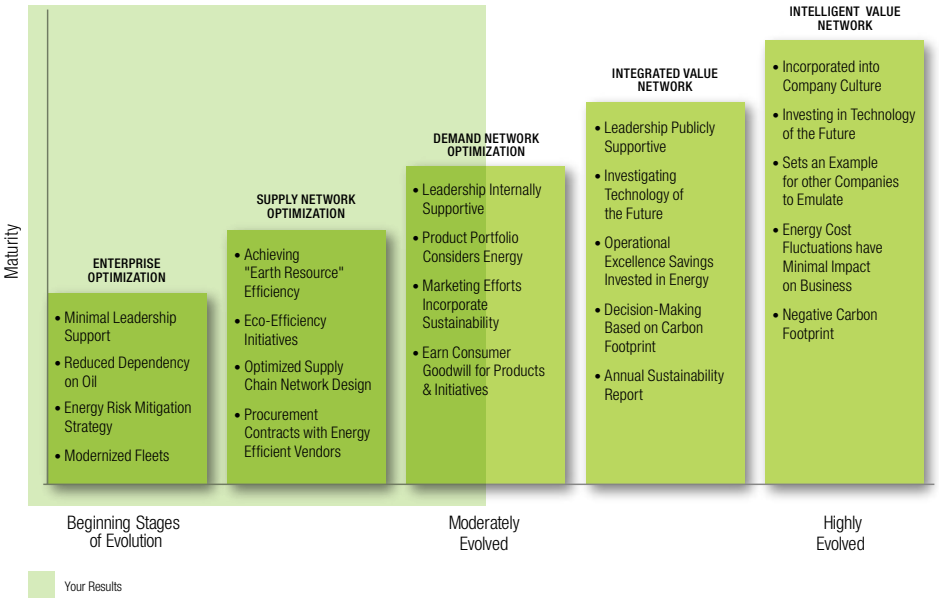

Figure 6: Energy Maturity Evolution

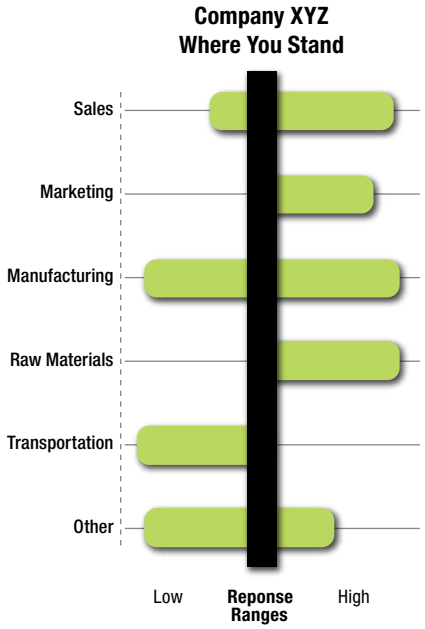

Figure 7: EBI Needle Indicator

2. Analyze the assessment

Once a company has assessed its energy impacts, it can use the results to review areas that are impacted most and devise plans to address them. Some issues might be immediately obvious, but this is not always the case. Often the assessment will expose areas where a lack of visibility into the metrics and information makes identifying issues in a particular area difficult. At this point, depending on the assessment results, a plan to move forward could involve reviewing historical trends, communicating with internal and external parties to inquire about additional information, or beginning discussions to pursue energy related initiatives.

3. Develop tracking measures for energy costs

Developing tracking measures for energy is the first opportunity to make a change that can position a firm for future improvements. Making a change without substantial justification is not reasonable in today's economy. Setting up measures to capture more data related to energy will lead to making informed decisions regarding all other energy related initiatives. Taking steps such as adding line items on financial tracking information or configuring software applications to capture energy consumption as an additional input can be essential to producing a system for tracking energy consumption and creating accountability.

Clarkston EBI Indicator Tool

Clarkston has developed the Energy Benchmarking and Intelligence (EBI) Indicator tool to assess the energy maturity of a company and identify opportunities that could increase revenue. The tool poses a set of questions across different categories (e.g., sales or transportation) that tie into an income statement to present a comprehensive analysis of the firm's energy footprint.

Using the tool provides companies with:

- *Examples of specific initiatives that could increase revenue*
- *Insight into how energy impacts multiple facets of their business*
- *Exposure to different energy practices successfully employed by other companies*
- *A maturity snapshot relative to other Consumer Products companies.*

4. Document corporate energy guidelines

Most companies incorporate energy considerations into their decisions or plans as an indirect cost, but how many have set up specific rules? Developing and documenting a corporate energy strategy is an additional way to track energy consumption, create accountability, and ensure a commitment to energy improvement. The corporate energy guidelines can contain requirements for areas such as supplier products, plant designs, and company purchases (like vehicles and equipment). Guidelines will ensure energy is accounted for in all company initiatives.

5. Set goals for energy or cost reduction

Setting goals for energy reduction provides results that can be regularly reviewed to help the company measure the value of energy-related initiatives. The goals should be quantitative and easy to understand. Setting goals and tracking their progress provides an effective way to communicate the firm's commitment to sustainable practices to employees, consumers, and shareholders. Goals will help establish a company culture regarding energy consumption and environmental considerations as well as serve as a mechanism to uphold accountability to the guidelines and commitment made by the firm.

6. Explore solutions that address costly oil and energy impacts

Numerous opportunities exist for companies to make changes that can reduce costs and maintain or increase revenue. One solution, if you can do it, is to raise prices. In 2008, P&G was met again with increased energy and raw materials cost. To maintain profit margins, P&G offset record costs for oil (used for plastic packing and pulp) by increasing prices on some their key brands.[25]

While raising prices is a possible solution, it can be risky, and it's only a short-term fix if the cost of oil trends higher and revenues falter due to reduced sales and higher commodity costs. In addition, raising prices is only a feasible solution if the competition is doing the same. The reality is that raising prices can be viewed as the result of a lack of planning. For companies to be industry leaders, they need to consider other solutions to help them become more energy independent and minimize the impact of oil price fluctuations in the future.

To help address the different impacts of fluctuating oil costs, consider the following table tracing the different impacts to some of the potential opportunities for improvement. Many of these opportunities are not feasible or justifiable at some companies, so consumer products manufacturers need to explore how each solution could affect them. In order to get an idea of how a few of these solutions work, the following sections explore several options from Table 1 and some examples of associated results.

While raising prices is a possible solution, it can be risky, and it's only a short-term fix if the cost of oil trends higher and revenues falter due to reduced sales and higher commodity costs.

Table 1: The Impacts and Potential Opportunities Related to Oil and Energy Costs

Impact	Opportunity
Reallocated consumer spending	• Create responsive marketing aligned to new consumer spending trends related to energy costs (fewer trips, bulk purchases, etc.) • Promote efficient or green products • Invest in innovative marketing and selling techniques • Create private label product offerings • Consider mergers or acquisitions for new products • Consider new partnering strategies • Aggressively use online presence • Change go-to-market model to mirror consumer spending habits and trip types
Increased transportation costs	• Purchase or replace vehicles with energy efficient models • Reduce truck sizes • Reduce/optimize packaging sizes • Install energy saving devices on transportation fleet • Use SmartWay Transportation Program • Invest in Supply Chain Optimization and Demand Driven Supply Chain • Consider hedging fuel prices • Consider outsourcing transportation • Evaluate the use of fuel surcharges • Build extra capacity closer to local markets • Consider direct store delivery where appropriate
Increased raw material costs	• Collaborate with suppliers • Change packaging materials • Change product lines • Explore long-term supply contracts • Use financial hedging strategies to mitigate the effect of rising commodity costs • Reduce “materiality” of products
Increased energy costs	• Purchase new energy efficient equipment • Replace energy inefficient lighting • Implement energy monitoring systems • Build new energy efficient facilities • Change production schedule to off-peak hours • Sell excess energy back to the grid • Invest in R&D of alternative energy • Switch to natural gas and other energy alternatives • Consider outsourcing manufacturing • Invest in solar technology and renewable sources
Detrimental regulations	• Lobby regulatory bodies for better policies • Switch to green alternatives • Invest in low-carbon emission initiatives

Consumer spending solutions - Retailers must recognize consumer trends quickly and have plans to be responsive to changes. When gas prices are low, consumers will be more selective in their purchases and price points, which has been the traditional consumer spending. The more interesting case is when gas prices are high, because that's when consumers tend to change their habits – like buying in bulk and consolidating shopping trips.

In response to high prices, consumer goods companies need to:

- Evaluate their product sizes and consider adding larger or more concentrated products
- Create impactful merchandising and promotions based on trends
- Coordinate with other companies to offer discounts for purchasing certain products in combination with others
- Bolster their online presence to target at-home internet shoppers

Unstable fuel prices and reduced consumer trips to the local grocery store further create an opportunity for more at-home meals and entertainment products and services. The Kroger Company has added more non-food products into its traditional Kroger grocery stores, which allows consumers to conduct more of their needed shopping in one trip.[45] Additionally, manufacturers and retailers can leverage these trends by coordinating promotional efforts for the consumer and organizing the retail store to be more shopper-friendly. For example, many grocers are allocating a section of the store to quick-to-cook meals where all of the ingredients are located in one area. Increasing eat-at-home and entertain-at-home trends mean that consumer product companies should be able to provide new, timely solutions and products.

Consumers will additionally shift more of their spending to less expensive private labels as a result of higher prices. Companies need to evaluate their product portfolio and have private label goods as a key component of their product offerings. Retailers are increasingly allocating more shelf space to private label goods and branding private label goods as well. Example retailers and their private labels include:

- Target Corp. (Archer Farms)
- Safeway Inc. (Eating Right, Safeway Select & Lucerne)
- Costco (Kirkland Signature)

Consumer goods companies can benefit from this trend by working with retailers to develop premium private label products and better manage the entire product lifecycle. This will allow retailers to lower their risk and receive expert advice from a seasoned veteran in product manufacturing and distribution.

Marketing and sales strategies should be adjusted during high oil fluctuations to combat the consumer spending trends by promoting lower costs and more efficient products. Consumers are looking for deals, so companies who distribute coupons and advertise lower costs are more likely to maintain sales. Peak oil prices also raised economic awareness among consumers and have opened the door for more

FoodLogiQ

FoodLogiQ has created a solution for engaging consumers called mobilemarQit, which provides a textable label on products that can be used to obtain information.

With the mobilemarQit message codes printed on items, consumers can send a text message to the keyword and learn more about the product, production practices, recipes, and promotions.

For further information on mobilmarQit and food safety solutions, check out: www.FoodlogiQ.com

effective green marketing campaigns for product promotion. Any opportunity to connect with consumers through highlighting energy efficiencies, environmentally friendly products, and promotions should be used to sway consumers to pick up a premium product instead of a private label.

One instrumental solution to addressing consumer spending and demand is demand driven supply network (DDSN), a tool that can minimize transportation costs by providing information to facilitate decision making. DDSN uses a system of technologies and processes to sense and react to demand changes in real time across the supply network. Leading companies that have embraced DDSN have brought higher margin products to the customer using less working capital.

A study by AMR Research shows that companies that excel at demand forecasting have 15% less inventory, 17% stronger order fulfillment, and 35% shorter cash-to-cash cycle times than typical companies.[46]

By creating a more responsive supply network, companies will be able to adapt to changing consumer preferences, and allow consumer goods companies the ability to more effectively manage fluctuating oil prices. This will help reduce inventories while meeting customer expectations of lower costs. Additionally, DDSN allows companies to implement a segmentation/localization strategy to get the right product to the right store to the right customer. There is a segment of the population where value equals price, and it is likely that no retailer can compete for this market without a tremendous focus on low pricing. With tight consumer wallets, the desire for value-based pricing will be a key element for consumer goods firms to maintain market share.

Transportation solutions - One well-known solution to reduce transportation costs is switching to energy-efficient vehicles. Many companies have already purchased new fleets or have plans in place to do so through future investments. Beyond a new fleet, many organizations are now working on adjustments to their transportation fleet management that helps further reduce shipment costs. To understand a few of the potential options, consider Wal-Mart's transportation initiative (see sidebar).

As organizations look to trim down their transportation costs, one option is the SmartWay Transport Program launched by the US EPA in 2004. The SmartWay Transport Partnership was developed to help companies save fuel and reduce emissions of greenhouse gases and air pollutants. According to Tom Gelinas' June 2008 article in *Fleet Equipment*, "SmartWay Generates Smart Buys", "Several truck and trailer manufacturers are proudly marketing products certified by EPA's SmartWay program that offer improved fuel efficiency. By meeting EPA performance specifications, these certified models provide the threefold benefit of saving operators money while reducing greenhouse gas emissions and air pollutants. SmartWay-approved equipment, such as aerodynamic bumpers and mirrors, can generate fuel reductions of 10 to 20% more than comparable trucks without these devices. For example, aerodynamic bumpers and mirrors on a trailer help conserve fuel by reducing wind resistance. Each qualified truck can produce savings from 2,000 to 4,000 gallons of diesel per year."[48]

Identifying Potential Benefits of DDSN

For a global multi-million dollar consumer products company, Clarkston helped create a customer demand driven supply chain strategic roadmap and business case that identified the following potential benefits:

- *Net present value of $111 million and a projected internal rate of return of 85%*
- *An on-going savings of roughly $75 million per year, with the majority coming from distribution savings and revenue lift*
- *Reduction of inventory by $25 million while also improving supply capabilities to meet customer service levels.*

Wal-Mart Transportation Attributes (2005)

- *2nd largest private US fleet*
- *3,300 trucks*
- *455 million miles driven in 2005*
- *900,000 deliveries to 6,500+ stores worldwide*

Solutions

- *Set goal to double fuel efficiency from 6.5 to 13 miles per gallon by 2015*
- *Installed diesel engines for auxiliary power units (APU) on all trucks – used for AC, heating, and running electronics in the cab.*
- *Added wind skirts to trailers to reduce wind resistance*
- *Amassed more than 100 hybrid light-duty vehicles*
- *Used smaller and lighter packaging*

Benefits

- *Saved $25 million a year from APUs*
- *Reduced carbon output by 100,000 cubic feet per year*
- *Improved overall fuel efficiency*[47]

Other potential solutions to address transportation costs include:

- Fuel surcharges are a possible solution, though not preferred. Fuel surcharges boil down to price increases, and the negative effects of raising prices were noted earlier.
- Supply chain optimization helps companies re-evaluate many transportation cost factors, including a review of supplier and distribution transportation routes; plus, it can note inefficiencies in supply schedules, less-than-load (LTL) deliveries, and retail stocking.
- DDSN, discussed earlier as a way to adjust to consumer trends, goes hand-in-hand with supply chain optimization and transportation because it can resolve scheduling, delivery, and load issues, thereby allowing firms to curb costs related to numerous factors.
- Outsourcing can be considered to circumvent inefficient transportation and reduce the associated costs for some companies; small organizations and those that ship infrequently need to evaluate new options, such as employing low-cost transportation for one or more routes, combining product shipments with other companies, or contracting full transportation service from a provider.
- Direct store delivery strategies could also trim transportation costs.

Finally, hedging is one more short-term strategy for fighting fuel costs that is risky but can be very effective if properly executed. Hedging works well when the price of oil increases after locking in a long-range contract but it can hurt bottom line performance if the price drops, as it did between July 2008 and January 2009. In late 2008, Coca-Cola Enterprises reported a loss of $11 million from attempts to hedge future fuel prices when the price of oil dipped unexpectedly.[49] Despite the risks, hedging still brings predictability and stability to volatile costs and remains a viable solution to combat fluctuating oil prices, especially if companies can take advantage of locking in contracts when prices are low. A positive example of hedging is Southwest Airlines, which saved almost $900 million in 2005.[50]

Raw material solutions - Innovative changes to packaging materials and product formulations can reduce oil-related production costs and have already been pursued by many industry leaders:

- P&G, Church & Dwight, and Unilever have designed more concentrated detergents to reduce the bottle size without reducing the number of loads per bottle[51]
- Pepsi is trying to develop creative solutions to the plastic problem by reducing bottle size and attempting to phase out the 12-pack and replace it with an 8-pack[52]
- Pepsi is also working to reduce the amount of plastic used to package bottled water while simultaneously decreasing the weight of the bottle[53]
- Coca-Cola Company is testing the use of polyactic acid (PLA), a biodegradable plastic resin made from fermented corn starch, to create bottles rather than using traditional oil based resin.[54]

In late 2008, Coca-Cola Enterprises reported a loss of $11 million from attempts to hedge future fuel prices when the price of oil dipped unexpectedly.

Wal-Mart has also made an investment in PLA that is paying huge dividends for the company. On November 1, 2005, the company switched 114 million clear petroleum based plastic containers to corn-based plastic packaging for cut fruit, herbs, strawberries, and brussels sprouts. This change is estimated to save roughly 800,000 gallons of gasoline and more than 11 million pounds of greenhouse gas emissions.[55]

Evaluating suppliers and collaborating with them to identify oil costs is another potential option to reduce the impact of oil price fluctuations. An evaluation of suppliers might uncover fuel surcharges or energy inefficiencies that are incorporated into their pricing. Communication with suppliers can help pressure them to become more efficient and could open a door to setting up more transparent collaborative systems that could allow suppliers to optimize their schedules and deliveries to reduce overall costs.

In the end, some products may be too expensive or there may be product lines that once were competitive but are no longer needed. Newell is an example of a company that dropped product lines as part of its solution to battle higher raw material costs.[56] Companies should review their portfolios in order to determine if there are opportunities to adjust prices or eliminate certain products to reduce their costs.

Energy solutions - Taking steps to reduce energy use is a key way for companies to lessen the effects of rising oil prices. By reducing energy costs, companies can improve profits and maintain margins.

Upgrading old equipment is a good way to reduce energy usage because newer designs are more effective in managing energy consumption; plus, they have an added benefit of getting the organization up-to-date with the latest functionality. Similarly, replacing old lights with new energy efficient ones will help reduce energy costs over time. The Procter & Gamble Amiens distribution center in France uses energy-efficient lighting, daylight dimming, and motion detection to save up to 70% energy.[57]

Wal-Mart - the second largest energy purchaser in the world - has retrofitted its older stores with energy efficient lights and more efficient air-conditioning units. Wal-Mart states that these investments have payback periods of less than two years. Additionally, the company has centralized monitoring of its energy use and directly controls air conditioning units from their corporate office in Bentonville, Arkansas. If a store manager wants to lower the temperature in the store s/he has to contact headquarters for approval. Wal-Mart keeps temperatures at 75 degrees during the summer in all US stores, higher than most other retailers. However, Wal-Mart's energy conservation and monitoring system goes even further. The monitoring station can determine if a freezer door is left open for a prolonged period of time and contact a contractor to fix the problem before the store manager even knows that a problem exists. The monitoring team saves the company millions of dollars on wasted energy and is another good example of a way to minimize energy costs. Companies can also consider building new plants or renovating existing facilities with new designs that reduce energy consumption. Heineken uses creative approaches to their energy challenges (see sidebar), and Church & Dwight chose to shut down inefficient plants and build new ones to replace them. Church & Dwight is building a new laundry detergent manufacturing and distribution center in Pennsylvania, closing the existing site in New Jersey.[58] They set aggressive goals for the new site, including:

Battling Increased Raw Material Costs

Newell Rubbermaid's largest raw-material expense is resin, an oil derivative used to make plastic, which accounts for about 15% of product costs.

Newell raised prices, some as much as 22%, to counter the higher energy and plastic expenses, and sold or exited product lines representing about $500 million, or 8%, in annual revenue.[56]

Heineken Brews an Energy-Efficient Solution

Heineken NV started thinking about energy savings long ago, and energy savings remain a priority. The company aims to use 15% less energy in 2010 than it did in 2007, and is trying to use less water and heat as well.[58]

How did they do it?

Their Zoeterwoude brewery is among the most efficient in the world. It burns natural gas on-site to create electricity, and uses the excess energy to heat vats of barley, hops, and water. Converting waste water into gas generates 10-15% of the plant's electricity.

Heineken exports its best energy practices to all of its breweries.

- 30% reduction in energy consumption,
- 50% reduction in solid waste and industrial effluent, and
- Use of renewable energy sources for on-site processing needs.[59]

Collaborating with energy suppliers may provide other opportunities to diminish the impact of high energy prices. Suppliers can sometimes offer reduced prices for purchasing energy in bulk or consuming energy during off-peak hours. Changing production schedules to operate during times when energy is discounted could be a minor process change that results in positive savings. Companies that generate energy should consider negotiating a way to sell excess energy back to a grid.

Collaborating with energy suppliers may provide other opportunities to diminish the impact of high energy prices.

Companies also need to invest in research and development of alternative energy sources to reduce their dependency on oil. Ethanol and biodiesel are two oil alternatives that are gaining momentum.

- Ethanol production increased 170% from 2004 to 2008 (81 million barrels to 220 million barrels)
- Biodiesel production has increased 2340% in the same timeframe (0.6 million barrels to 16 million barrels).[60]

Investing in renewable energy sources is instrumental to building a sustainable organization that relies less on oil. For example:

- Solar energy is a renewable energy source gaining use as a supplement or replacement to traditional energy generation methods. Frito-Lay installed a solar thermal water heating system on its headquarters roof to lower energy costs; the system heats more than 65% of the hot water used in select areas of the building.[61]
- Wind turbines offer another possibility for generating renewable energy.

Other alternatives for reducing energy costs include shifting manufacturing to contractors who can be more efficient, or using cheaper oil alternatives for internal manufacturing. One or both manufacturing changes could be economical for some companies.

Regulation solutions - It's easy to denounce regulations as out of an industry's control, but that's not the case. Proactive organizations can stand up to regulations by lobbying, thus imposing their will on policy-makers to shape agendas and ensure that new regulation is company-friendly. Low-carbon and renewable energy mandates are just a few of the latest discussions that impact energy and oil consumption, which should be closely tracked.

In addition to lobbying, companies should seek relationships with policy makers and be in a position to volunteer for pilot programs or incentive programs. Acquiring detailed information about what might be next in the pipeline will allow an organization to be prepared to make adjustments when regulations are passed. This will allow them to set an example for others to follow and garner positive press and attention for being the first.

The last important thing that companies can do to stay ahead of policies related to oil is pursue energy-related initiatives in the immediate future. Switching to green alternatives and low-carbon operations are two priorities that can promote sustainability and allow companies to avoid future disruptions due to both energy fluctuations and governmental energy requirements.

7. Invest in energy reducing projects

Most companies fall into two categories: those that have not made many investments, (primarily smaller companies), and those that have continually invested in improvements, (primarily larger 'big name' companies). The former companies will have ample opportunities to make great strides in improvements by tackling the easier and less capital-intensive projects. The latter companies have already tackled the 'low hanging fruit,' to make these gains, and now must invest in more risky and expensive improvements that will have longer payback periods.

Arla Foods (the world's fifth largest dairy producer by revenue) is one such company that has been investing in efficiency gains. The company started off by implementing projects that had a payback period of less than two years. Now that Arla has tackled the 'easier' projects, the company has started investing in pricier projects with more long-term effects.[58] If energy prices rise, the time required to capture return on these investments is shorter and these projects are a good way to prepare for volatile oil prices.

Depending on the company, one or more of these solutions may help address cost increases and allow them to save money. Organizations must use the structure and information developed in the previous steps to find projects that provide the greatest value toward the established goals and prioritize them first for quick wins that help build momentum within the firm. The project examples from this paper might help serve as the first place to start evaluations since their results are already evident.

8. Track and monitor improvements

In order to ensure successful projects, they should include a means for quickly evaluating their benefits on a small scale to ensure that energy-savings can be projected and tracked through the remaining development. Some small energy-reduction projects already have documented positive results, but, if for some reason, the project isn't heading in the right direction, the determination can be made quickly through a small-scale evaluation. By the time the easy projects are complete, the framework and benefits realized from good planning will justify the longer projects despite their slower return on investment.

Company Spotlight

Arla Foods is a farmer-owned cooperative based in Denmark. Facing among Europe's highest taxes on energy consumption, Arla has to cut energy use to stay competitive. Arla's environmental plan for 2006-2010 aims to cut energy and water use by an additional 5% each.

Shorter term, quicker pay-back projects include:

- *Replacing absorption dryer in the cheese aging room*
- *Repairing leaks in air-compressed pipes.*

Longer term, longer pay-back projects include:

- *Changing to a new $140,000 water chiller, expected to save 290,000 kilowatt-hours of electricity each year.*
- *Buying a new $260,000 machine to dry cheese.[58]*

The Road Ahead

High oil prices are a big concern for consumer goods firms trying to keep costs low and maintain profit margins. Many leading consumer goods companies have realized that the future of high oil prices is a real possibility and have taken preemptive steps to minimize the risk of those costs. Companies that have already invested in improvements are a step ahead of their counterparts and well prepared for whatever oil fluctuation is next.

The last two years has shown us that oil is sure to do one (or more!) of the following three things:

- Oil prices rise
- Oil prices fall
- Oil prices remain constant

While each situation carries its own set of challenges, the first step for consumer goods companies is to assess their firm and become aware of the areas where the volatile price of oil impacts their company the most. Learning from the examples of other firms is a good initial approach, but being proactive about energy can drive a company to the top of the industry. As oil prices continue to fluctuate, the company that takes advantage of investing before prices rise substantially stands to benefit the most.

Understanding and addressing energy inefficiencies will help a company differentiate itself from its competitors and provide a vehicle for new marketing and sales campaigns regarding environmentally friendly processes. Creating a more sustainable company through energy-efficient improvements will help companies avoid future business disruptions due to fluctuating oil-prices and instead drive competitive advantage.

Clarkston's sustainability solutions

At Clarkson Consulting, we believe that, in the long term, companies will be faced with significant energy and resource shortages. Proactive companies will need to plan for changes in their energy and resource supplies and will need to be prepared to manage in a world of climate change, regulatory restrictions, supply chain risk, and financial uncertainty. On the consumer side, they will need to be prepared to face significant changes with mainstreaming of green consumers, rise of socially responsible Gen Ys and significant trust and reputation issues. All these trends point to the need to start identifying and creating a Sustainability plan that will establish a company's position in the industry. Companies that are proactive in identifying and reducing energy needs, resource usage and supply chain energy intensity will find themselves in a position of power compared to their competitors.

At Clarkston we provide solutions that help companies establish a Sustainability strategy, monitor and mitigate energy consumption, green supply chains, foster green change management, and enable measurement through technology. Our extensive subject matter expertise within CPG coupled with our pragmatic value enhancing methodologies enable us to provide clients with solutions that work and sustain over long periods of time.

For further viewpoints of sustainability, please refer to: http://www.clarkstonconsulting.com/ideas/articles/docs/Report_Sustainability_revised.pdf

To alleviate the pressure of uncertain energy costs and create a more sustainable organization, follow these steps:

1. *Assess the impact of increased and volatile oil prices*
2. *Analyze the assessment for areas most affected by increased oil costs and missing information*
3. *Develop measures to track costs related to energy consumption*
4. *Document corporate energy guidelines*
5. *Set goals for energy cost reduction*
6. *Explore opportunities for energy investment*
7. *Invest in energy reducing projects*
8. *Track and monitor improvements*

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