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PRODUCT LINEUP

GlaxoSmithKline, a British pharmaceutical that has benefited millions of people all over the world, offers a wide variety of products ranging from prescription medicines to consumer healthcare products. Besides these items, they also provide vaccines and make them as accessible as possible to many parts of the world.

CONSUMER HEALTHCARE PRODUCTS

In the consumer healthcare section, they focus on five categories which include pain relief, oral health, respiratory, nutritional/gastrointestinal and skin health. Some of these include well-known products include TUMS, Nicorette Gum, Sensodyne and Horlicks. Under their pain relief section, they are known to make Excedrin which has been a leader in headache pain relief for over 50 years and it's also available in many



other parts of the world, like Russia, Mexico, Poland, Egypt, Belgium and the Netherlands. Marketed under different names in different countries all over the world, GlaxoSmithKline also sells Panadol which is a paracetamol-based pain relievers.

Paracetamol is mainly used as a headache and fever

reducer, and can treat other conditions such as muscle aches, arthritis and colds. If you've seen any Sensodyne commercials, little did many people know that GlaxoSmithKline is the



company behind it. Sensodyne helps relieve tooth sensitivity, making it a lot less painful to eat something as cold and delicious as ice cream. They also produce Flonase which is a 24-hour allergy relief medicine that helps with nasal congestion, a runny nose, itchy eyes, etc. that you use through spraying the medicine into your nostrils. Under their nutritional/gastrointestinal section, they make a nutritional drink that's made of wheat, milk and powdered barley, but it can also be found as biscuits or as a special formula for expectant or breastfeeding mothers. It's consumed in more than 30 million homes in

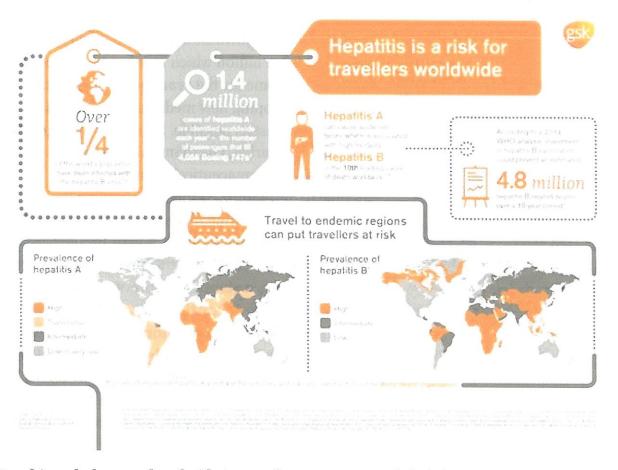


India, and helps nourish kids who lack the nutrients needed to live a healthy life. Another popular item that also happens to be America's #1 antacid that GlaxoSmithKline produces is called Tums. Tums provides fast heartburn relief by traveling directly to the source of the heartburn, dissolving easily, and neutralizes the acid on contact. Last but not least, in their skin health section, they have Abreva which aims to shorten healing time and duration of symptoms of a cold sore. It's the only over-thecounter cold sore medicine that has been approved by the US Food and Drug Administration, and not only does it help

soothe, but it heals cold sores. If treated when the cold sore is first spotted, Abreva can help heal the cold sore in as little as two and a half days. It works by settling deep into the skin to block the source of the spreading virus, and provides a barrier to protect healthy skin cells.

VACCINES

In 2016, GlaxoSmithKline's pharmaceutical and vaccine section brought in £4.5 billion from new vaccines being released into the market. They have a prominent vaccine market in over 150 countries and distribute over 2 million vaccines to people everyday. Their vaccines benefit everyone from infants to senior citizens. To help protect the developing immune systems of infants and small children, they produce vaccines against measles, meningitis, and pneumonia, which has prevented 2-3 million deaths every year. For travelers going to countries where there is an increased risk of serious illness, GlaxoSmithKline makes vaccines which cover diseases such as Hepatitis A and



B, rabies, cholera, and typhoid. As people start to age and their immune system starts to weaken, they make vaccines against diseases like the influenza and whooping cough for older adults. One of their more widely used vaccine is the malaria vaccine. Malaria is a mosquito-borne disease caused by a parasite which cause 400,000 deaths each year. Some symptoms include fever, shivering, vomiting, seizure, coma, and death if left untreated. Some of the goals that GSK works to maintain are supplying anti-malarial medicine, researching medicine and vaccines to supporting community prevention and to train health workers in educating others about deadly diseases and what they can do to keep themselves safe. In 2014, they distributed over 800 million vaccines and more than 80% of those vaccines went to developing countries. Because some countries may not be able to pay the full price of the vaccines, they use a model called "tiered pricing", which allows the countries to pay a fair price based on their particular circumstances so that they can afford the vaccines that would help benefit their population and future generations to come. Tiered pricing also helps support the countries to implement programs that would reach large proportions of the population they aim at distributing the vaccines to and it reflects GlaxoSmithKline's desire to help countries grow their immunisation programs and broaden access to lifesaving vaccines.

PHARMACEUTICALS



In 2016, GlaxoSmithKline's pharmaceutical market generated £16.1 billion which represents 58% of the company's income for the year and invested £2.6 billion in developing new medicine for patients who need them as fast as possible. Similar to their goal for their vaccine market, GlaxoSmithKline focuses on making their pharmaceuticals as accessible as possible to developing countries of varying incomes. One of their best-selling medicines, Advair is used for respiratory problems. In 2016, Advair brought in £3.485 billion for GlaxoSmithKline. Advair is made up of fluticasone, a steroid that prevents the release of substances in the body that cause inflammation and salmeterol, a bronchodilator, which helps control and prevent symptoms caused by asthma or COPD (Chronic obstructive pulmonary disease). It works by

relaxing muscles in the airway to improve breathing. It's used to prevent asthma attacks but it won't be effective in treating an asthma attack if it happens. Advair comes in two

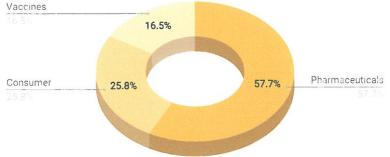
different forms, a powder and an aerosol form. DISKUS, the powder form, is used with a special inhaler that comes with blister packs that have measured doses of the medicine. HFA, which is the aerosol form HFA is a canister with an inhaler device.



KEY COMPETITORS

OVERVIEW

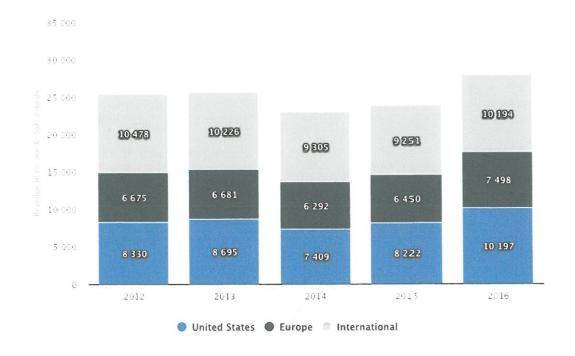




GlaxoSmithKline Revenue By Business

GlaxoSmithKline focuses its business on three main branches: Vaccines, Pharmaceuticals, and Consumer Healthcare. Competitors for each of these business areas vary, as different pharmaceutical and healthcare companies focus on different areas, although many also combine all 3 similar to GSK.

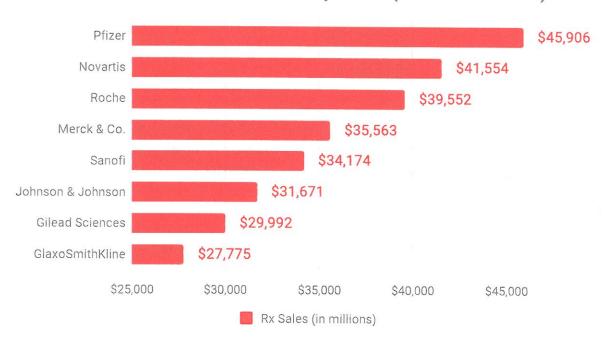
GlaxoSmithKline ranks 2nd overall in vaccines and consumer healthcare, and 8th in pharmaceuticals. The pharmaceutical business generates 58% of the total revenue, and is focused on discovering, developing and commercializing medicines to treat a range of acute and chronic diseases, in respiratory, HIV, and more. The vaccine business generates 16% of the revenue, but has the broadest portfolio of any company, with vaccines for people of all ages. The consumer healthcare business generates 26% of the revenue and develops and markets products for wellness, oral health, nutrition and skin health.



One factor to consider when comparing recognizability of these top products is that GSK, as a company based in Britain, often has a significant portion of its profits come from Europe and other international markets such as Asia. In fact, in 2016, equal revenue came from the U.S. and from international markets outside of Europe. However, their U.S. sales have been increasing as more of their drugs are approved for sale by the FDA.

PHARMACEUTICALS

Overall, when ranked by total Rx, or prescription drug, sales in the 2016 fiscal year, GSK ranks 8th in the top global pharmaceutical companies, with a revenue of \$27.775 billion and 3.6% of the worldwide prescription drug market share.



Top 8 Pharmaceutical Companies (in millions USD)

The list is led by Pfizer, an American pharmaceutical corporation, who had a 2016 revenue of \$45.906 billion and currently holds 6% of the prescription drug market share. Following Pfizer are Novartis and Roche, two Switzerland-based companies with revenues of \$41.554 billion and \$39.552 billion and 5.4% and 5.2% of the prescription drug market share respectively. Combined, these top 8 companies depicted in the graph make up 37.2% of the worldwide prescription drug market, and generated \$286.19 billion in pharmaceutical based revenue in 2016.

GLAXOSMITHKLINE

GSK's respiratory portfolio is the largest contributor to the company's pharmaceutical sales, followed by their HIV portfolio. The products also span fields like cardio- vascular, metabolic, urology, immuno- inflammation, oncology, and more. The company is



projected to grow 3% by 2022 but lose 0.4% of its current market share. These projections, by EvaluatePharma, also estimate that GSK's vaccine sales in 2022 will be more than \$33.7 billion, compared to its current \$27.8 billion.

PFIZER

Pfizer's top products are primarily in the pharmaceutical branch, with the notable exception of their top-selling product, Prevnar, a pneumonia vaccine. The three products with the highest revenue are Lyrica, Enbrel, and Ibrance.

Lyrica, the common name for the drug pregabalin, is used to treat nerve pain, muscle pain, and seizures, and generated \$4.165 billion in revenue. Enbrel, is used to treat five chronic disease, including moderate to severe rheumatoid arthritis. Ibrance, or palbociclib, is used to treat metastatic breast cancer. None of these top-selling products directly compete with GSK products, however, with more research and development occurring in both companies, it is likely that more competition will become inevitable.

Pfizer Top Pharmaceutical Sales (in millions USD)



NOVARTIS

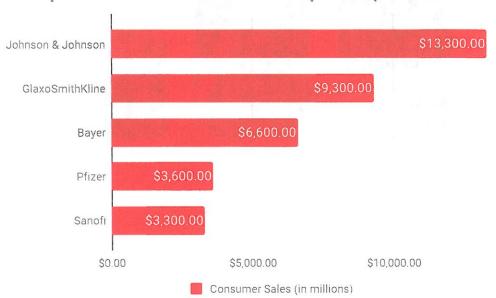
Novartis Top Pharmaceutical Sales (in millions USD)



Novartis focuses its business on pharmaceuticals, and has leading products in the oncology field. Its top product, Gleevec, is a chemotherapy medication used to treat leukemia and several other types of cancer, and generated \$3.32 billion in revenue in 2016. Gilenya, or fingolimod, is an immuno- suppresive drug that can treat multiple sclerosis, a disease in which the immune system eats away at the protective covering of nerves. Lucentis, the third best-selling product can treat wet age-related macular

degeneration, an eye disease that causes vision loss. None of these top-selling products directly compete with GSK products, however, with more research and development occurring in both companies, it is likely that more competition will become inevitable.

CONSUMER HEALTHCARE



Top 5 Consumer Healthcare Companies (in millions USD)

GLAXOSMITHKLINE

GlaxoSmithKline has a broad range of available consumer healthcare products, spanning pain relief medication, oral health, respiratory, nutrition, and skin health.



GSK Top Consumer Health Sales (in millions USD)

With profits exceeding \$9 billion and a 2nd place ranking, this sector is extremely successful, especially in international markets. While Johnson & Johnson products are undeniably more recognizable in the U.S., a majority of GSK's products are primarily marketed in Europe and in many Asian countries, including India and other Southeast Asian countries.

NOSUHOL & NOSUHOL

Johnson & Johnson is arguably the most recognized consumer healthcare brand, with products ranging from baby care and beauty to oral care and over-the-counter drugs.

Some of its most successful over-the-counter drugs include Tylenol and Motrin, headache and pain relievers, and Benadryl and Zyrtec, allergy symptom reducers. All of these directly compete with GSK drugs such as Excedrin, Panadol, and Flonase. Johnson & Johnson's pain relief currently outperform GSK's in the U.S., but in international markets such as Europe, GSK tends to have more successful products.

They are also well-known for their beauty brands such as Neutrogena and Aveeno, and this segment's revenue reached \$3.9 billion in 2016. Johnson's baby products range from cosmetics to skincare, and generated more than \$2 billion in 2016.

Their oral care products are not as varied, however, the Listerine Mouthwash is globally popular, and future expansions in this area could create competition for GSK products such as Sensodyne and Aquafresh.



BAYER

Bayer, a pharmaceutical company based in Germany, focuses its consumer healthcare business on over-the-counter drugs for pain relief, and allergies, dermatology, nutrition, and skin care.

Their most popular product Claritin, which is an allergy medication, generated \$605 million in revenue itself. This product is in direct competition with GSK's Flonase, and is currently performing better in sales. This could be due to the fact that Claritin has ingestible pills while Flonase is a nasal spray, which people might be less comfortable using.

The wellness category also includes well-recognized products such as Aspirin and Aleve.

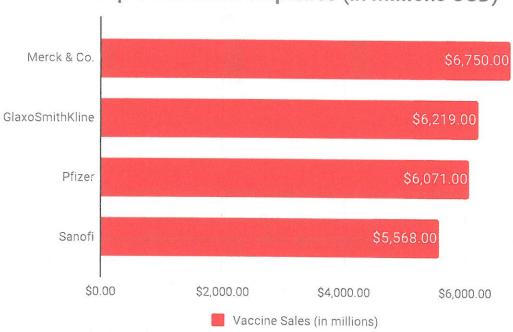


These compete with GSK's headache and pain relievers such as Excedrin and Panadol.

Their dermatology segment is based on two main products: Bepanthen and Canesten, which are antiseptic creams. Although the purpose of their products may vary slightly, GSK also has significant revenue generated through the skin health products, such as Physiogel and Fenistil. Currently, GSK's skin health brings in slightly more revenue than Bayer's but the competition is close.

Their nutrition products include the One a Day vitamin supplements and Elevit, a pregnancy multivitamin. The foot-care category is comprised of Dr. Scholl's, which produces various products for foot pain and comfort.

VACCINES



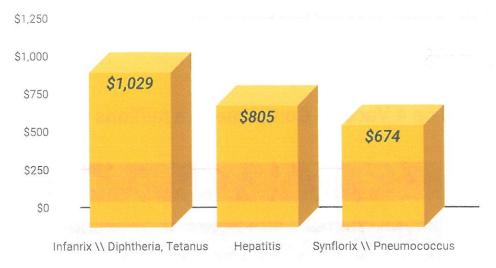
Top 4 Vaccine Companies (in millions USD)

GlaxoSmithKline ranks 2nd in the top pharmaceutical companies by vaccine sales, with a revenue of \$6.22 billion and 22.6% of the worldwide vaccine market share. The list is led by Merck & Co., with a 2016 vaccine revenue of \$6.75 billion and 24.5% of the vaccine market share. Pfizer and Sanofi follow with 22% and 20.2% of the vaccine market share respectively. Together, these 4 companies make up 89.3% of the worldwide vaccine market shares.

GLAXOSMITHKLINE

GlaxoSmithKline, although currently ranked 2nd in the vaccine market, is projected to grow 6% by 2022 and overtake Merck & Co. to become the top company in vaccine sales with 24.5% of the market. These projections, by EvaluatePharma, also estimate that GSK's vaccine sales in 2022 will be more than \$8.6 billion.

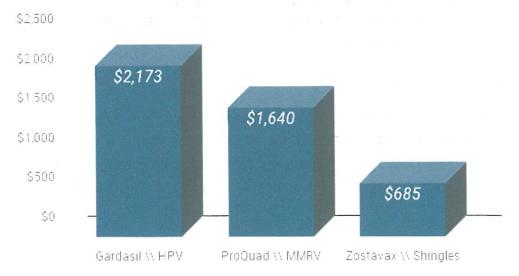




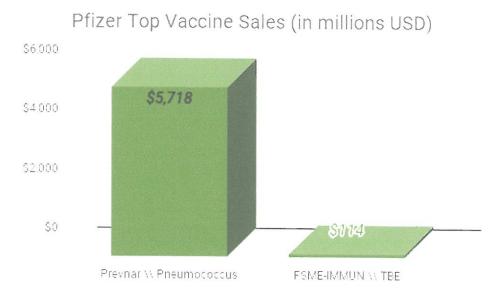
MERCK & CO.

Merck & Co is an American pharmaceutical company that focuses on pharmaceuticals and vaccines, with its vaccines segment being especially strong. Its success can be mostly attributed to the diversified products, with vaccines for diseases like HPV, which 79 million Americans have. The ProQuad vaccine is the only FDA approved vaccine for Measles, Mumps, Rubella, Varicella (MMRV), which is a common vaccine that most children under the age of 12 take. Being the sole provider in the U.S. boosts the revenue significantly. Currently, Merck & Co. and GSK do not have any direct competition in vaccine treatments, but with research being conducted for future vaccines, that may change.

Merck & Co. Top Vaccine Sales (in millions USD)



PFIZER



Pfizer, previously described in the pharmaceutical section, also places 3rd in vaccine revenue. Unlike GSK and Merck & Co., Pfizer does not have a wide range of vaccines, and generates almost 95% of its revenue with one product. The most profitable vaccine across all companies is Pfizer's Prevnar vaccine that treats pneumococcal diseases, or lung infections. This product is in direct competition with GSK's Synflorix pneumococcal vaccine, and is clearly performing better, pulling in over \$5.8 billion in revenue compared to Synflorix's \$674 million. This is largely due to the fact that in the U.S., and surprisingly also in the U.K. and most countries in Europe, the Prevnar vaccine is either the only government approved pneumococcal vaccine, or the government recommended one. Synflorix, however, is still a relatively new product, and just received prequalification from the World Health Organization in Oct. 2017. While Prevnar is mostly available in developed countries, Synflorix aims to use its storage technology to deliver the vaccine to some of the world's poorest countries. These differences in goals will ensure that Synflorix, and thus GSK, will continue to generate more revenue.

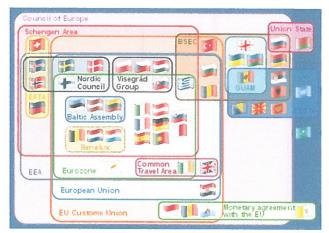
INDUSTRY ANALYSIS AND FORECASTING

OVERVIEW

The pharmaceutical industry is in a time of upheaval. Many changes, both in the United States and abroad, are underway, with the potential to drastically affect pharmaceutical companies, including GlaxoSmithKline.

BREXIT

On June 23, 2016, 51.6% of the UK electorate voted to leave the EU in a referendum that has come to be known as Brexit. While Article 50, the clause that will be invoked should the UK decide to follow through on Brexit, has not yet been invoked, it is a likelihood that Theresa May, the Britain's Conservative Prime Minister, will pursue the resolution



of Brexit. Thus, this section will be written on the possible changes should Brexit come to pass in terms of the pharmaceutical industry.

Should Brexit come to pass and the UK still wishes to participate in the pharmaceutical industry with Europe, it would need to change its model to reflect its new situation. There are two potential models that the UK could base their new

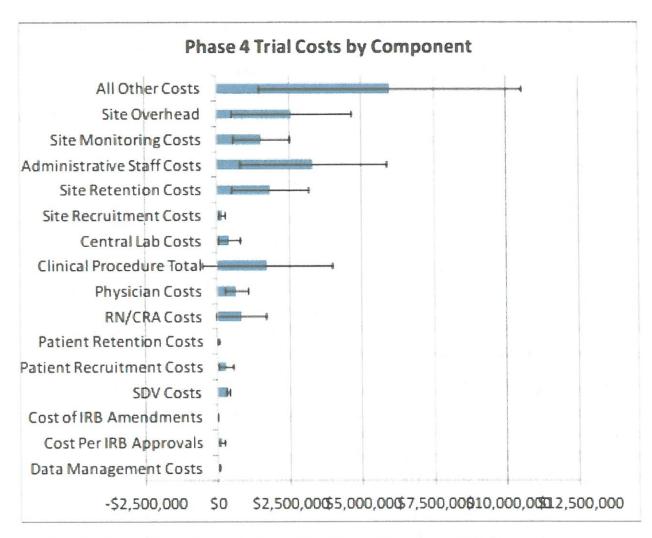
system off of, the Norway model and the Switzerland model.

The Norway model entails participation in the European Economic Area. This would meant that the UK would accept all EU and EU legislation concerning pharmaceuticals, and in exchange the EU would be allowed to do business there. However, considering that the British recently voted to be as independent of the EU as possible, I do not see this as a likely outcome should UK rhetoric be taken at face value.

The second, and more likely outcome, would be for the UK to model themselves after Switzerland and the European Free Trade Association. The Swiss are not officially a part of the EU, which is reflected in their interactions with Europe. Should the UK wish to emulate this, they would need to establish a wholly different, independent British authority on Pharmaceuticals. Then, they would still need to pass EU clinical trials on their products, while simultaneously clinically trialing these products at home.

The issues with this system would be multifold. The foremost would be the incompatibilities between the UK and EU's operations. They would no longer share a

singular, unified system, so transferral of patient data would be made more complicated. This is a major issue for the UK specifically, because many from mainland Europe travel there for business, and should a medical emergency arise in the UK, it would be more difficult to receive treatment. Another issue is the above stated need for separate clinical trials. As it stands, clinical trials are an exhaustive process that does not guarantee success. To have to replicate them over multiple groups would complicate matters.

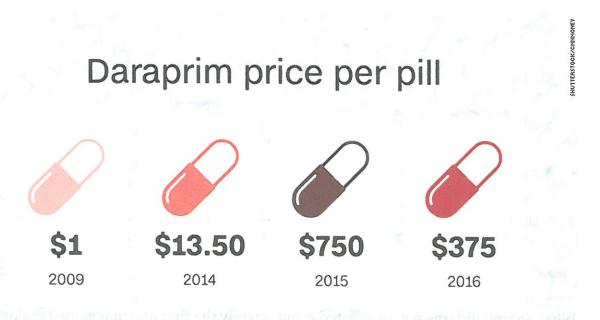


Essentially, the pullout of Britain from the EU would create a difficult bureaucratic situation for the UK in that they would no longer have the support structure of the EU. Were the change to occur over a longer period of time, perhaps a new structure could be made beforehand to dampen the impact; however, the suddenness of Brexit has prevented this. Time will tell to what extent Brexit will affect UK pharmaceuticals.

COSTS

Another troubling trend in the Pharmaceutical industry is large increases in prices for medication over relatively short periods of time. While this may generate more revenue in the short run, it damages future profitability by endangering public relations, as well as draws the scrutiny of governing bodies, which may enact regulation to restrict the industry as a whole.

In August of 2015, Turing Pharmaceuticals, headed by Martin Shkreli, acquired Daraprim, a drug used in the treatment of AIDS patients, for \$55 million from Impax Laboratories. Although the patent on the drug had expired, no generic alternative was available, and Turing subsequently raised the price by a factor of 56.



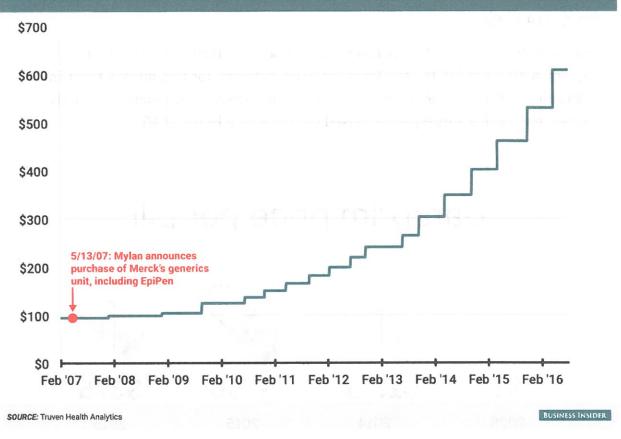
SOURCE: HOSPITAL PRICE

This event sparked massive public outcry, with Shkreli being denounced nationally by news networks and presidential candidates, going so far as to be called "the most hated man in America". In December 2015, Shkreli was indicted on federal charges of securities fraud, and convicted of these charges in August 2017. He is currently awaiting sentencing.

Following this event, the slowly creeping increases in prices of the pharmaceuticals industry came under greater scrutiny, and in the wake of this incident, more scandals came to light. Mylan received criticisms after they again raised Epipen prices, totaling a

400% increase since 2008. In the UK, the NHS(National Health Service, Britain's public health system) has accused its suppliers of hiking its prices by over 1000%. Pfizer was fined \$84.2 million after converting a price-controlled, branded drug to a generic alternative and hiking its price by 2600%.





What Shkreli did was not an isolated event, merely the first one that gained major media traction and has led to greater scrutiny of the industry as a whole. With many instances of improper business practices coming to light, trust in the industry is at a low point, with potentially irreversible damage to public relations. Established pharmaceuticals giants risk alienating their consumers entirely, which may encourage smaller pharmaceutical firms and startups to take over market share that these larger corporations may have otherwise occupied.

TECHNOLOGY AND PHARMACEUTICALS

A recent development in pharmaceuticals has been a greater amount of incorporation of technology into pharmaceutical processes. The 21st century has brought new

technologies which can be utilized to improve the efficiency of processes within the industry.

One example of this collaboration between tech and pharmacy is Google, its parent company Alphabet, and their involvement in the industry. Recently, Google has formed a partnership with GlaxoSmithKline and Sanofi with IBM following suit, themselves partnering with Teva, Celgene and Quest Diagnostics. Such a collaboration is mutually beneficial; for Google, it provides them with a "foot in the door" for the industry, and for the pharmaceutical companies, a partnership with Google can provide them with exactly what they need: an incredible large sample of data. Using this data, corporations can use user info to better target independent demographics, personalize medical prescriptions, or predict what one may need to have prescribed before one even visits the doctor. Speed and precision are factors of great importance within the pharmaceutical industry, and big data can help with both.

POLITICS AND HEALTHCARE

One major issue on a national scale in the US is that of healthcare. In March 2010, the Affordable Healthcare Act(ACA) was signed into law by the Obama administration. As a whole, the bill provided protections to consumers, at the expense of large organizations and corporations.

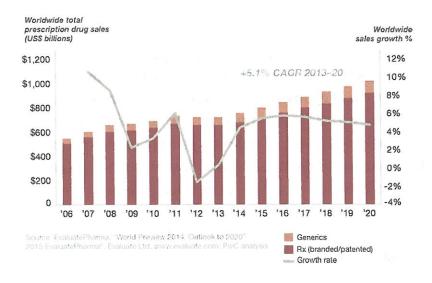
In the modern political climate, however, the ACA is at risk of repeal. For the past seven years, Congressional Republicans have been moving for a general repeal of the ACA, to no avail. However, with a Republican in the White House, this motion may finally gain success. Already this year, a repeal of the ACA was narrowly defeated by one vote. It remains to be seen whether Republicans will try again, though they likely will.

Should a repeal of the ACA come to pass, with fewer regulations, expect to see a greater amount of aggressive monetization efforts from pharmaceutical corporations, as they will have more flex room with fewer restrictions on their activities.

SUMMARY

Depending on one's view of the situation, Pharmaceuticals may appear to be in a good spot right now. They have a strong grip of the market, able to raise prices on their products without much real blowback, and the repeal of the ACA perpetually looms on the horizon.

While the pharma industry struggles with stagnant growth rates...

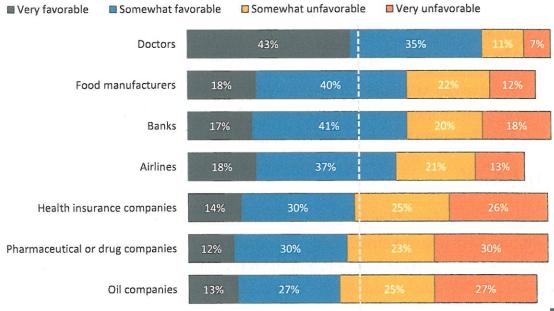


However, these actions are indicative of the actual health of the industry. The industry itself is relatively stagnant, with fewer major diseases to cure in the wake of tuberculosis, smallpox, and other such plagues wiped out in the past hundred years. Indeed, as populations become healthier by consuming pharmaceuticals, pharmaceutical companies, paradoxically, will become

needed less and less. Thus, it is in their financial interest to charge exorbitant prices while they still can.

Fewer Than Half The Public Views Drug Companies Favorably

I am going to read you a list of companies and groups. For each one please tell me if you have a favorable or an unfavorable opinion of each.



NOTE: Some items asked of half sample. Don't know/Refused responses not shown. SOURCE: Kaiser Family Foundation Health Tracking Poll (conducted August 6-11, 2015)



50%

However, this weakens pharmaceutical companies' standing with the public. As the consumer is increasingly squeezed, there will be a point reached where they will no longer tolerate the behavior of pharmaceutical companies. At that point, the industry will take a nosedive, with a relatively stagnant industry needing to be shaken up. Perhaps the addition of new alternatives could prevent this future occurrence - one major factor missing from the market right now is competition - but time will tell what changes will be necessary.

As it stands, pharmaceutical companies are in a stable position. However, looking toward the future, pharmaceuticals are likely to encounter severe difficulties with innovation and customer retention. Thus, I expect their position to decline over time, perhaps being partially replaced by newer competition.

HISTORY OF COMPANY

While GlaxoSmithKline officially opened in 2001, it the product of a merger between Glaxo, Wellcome and SmithKline Beecham, each company with their own rich history.

GLAXO

In 1873, Joseph Nathan arrived in New Zealand in search of new opportunities and decided to form Joseph Nathan and Co, a general trading company, in Wellington, New Zealand. The England immigrant began his business selling Definance, a dried-milk baby food made from milk. They later realized this name was not appealing and changed

the product's name to Lacto. This name was not available as it was already registered and would be confusing to consumers, and by 1906, the name Glaxo was coined. Glaxo Laboratorites was soon formed with its parent company being Joseph Nathan and Co.



The company moved on from selling baby food, and released its first pharmaceutical product, vitamin D, in 1924., was registered as a subsidiary company in London in 1935 and bought out it's parent company in 1947. Continuing to focus on pharmaceutical products, Glaxo bought Allen and Hanburys Ltd in 1958, a pharmacy in London established in 1715. Allen and Hanburys, originally founded as Plough Court Pharmacy, was known for the quality of their drugs and had numerous factories in East London for producing baby food, pills, tablets, research, and more. With its acquisitions, Glaxo was on track for success.

Under pharmacologist David Jack's lead, Allen and Hanbury, under Glaxo's control continued on to make groundbreaking discoveries in the pharmaceutical industry. Jack's team of researchers were specialized in the development of drugs for treating asthma and produced numerous treatments, including Ventolin in 1969. Outside of Allen and Hanbury, Glaxo produced numerous treatments for skin diseases and more, such as Betnovate in 1963.

Glaxo's influence arrived in America after the acquisition of Meyer Laboratories in 1978. The American arm of the business, Glaxo Inc., manufactured products in Zebulon, North Carolina, while the headquarters, where research was conducted, was in Research Triangle Park, North Carolina.

BURROUGHS WELLCOME AND COMPANY

Burroughs Wellcome was founded in 1880 in London by Henry Wellcome and Silas

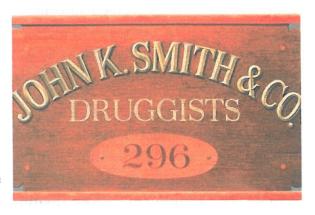


Burroughs, two American pharmacists. At the time, most medicine was in the form of potions and powders, and the two wanted to develop medicine in the form of pills because they were safer, more effective, and easier to take in standardized doses. By 1884, the company had developed the pills, known as "Tabloids." Tabloids became a part of everyday language, with the word being used to describe a compressed dose of anything, like a tabloid magazine. Sadly, Burroughs passed away in 1895, but Wellcome continued on without any hindrance and expanded the company overseas in the start of the 20th century. The company established research and manufacturing facilities in Tuckahoe, New York in the 1920s, and these were the first research laboratories in the industry. Burroughs Wellcome and Company, with its Nobel-Prize winning

scientists Gertrude B. Elion and George H. Hitchings, would continue on to produce valuable drugs for the public, including Mercaptopurine, a drug used to treat leukemia. In 1959, the company bought Cooper, McDougall, & Robertson Inc and started to make medicines for animals.

SMITHKLINE BEECHAM

SmithKline Beecham itself is the product of a merger between two pharmaceutical giants. The company began it's humble origins in 1830, when John Smith opened a drug store in Philadelphia. When his younger brother George joined him in 1841, the company was officially known as John K. Smith & Co. After Mahlon Kline joined the business in 1865, the business's name changed again to Smith,



Kline & Co. The business only started to focus on research and developing medicines after a series of mergers and acquisitions in the 1890s, including a key acquisition of French, Richards and Company in 1891, a well-respected drug resaler. This acquisition gave Smith, Kline & Co. a great number of consumer brands, allowing them to further spread their influence and expand the business. The company then acquired Recherche et Industrie Thérapeutiques, a vaccines business that was known for its polio vaccines,

in 1963. This led to another name change: SmithKline-RIT. After these acquisitions, the business focused on expansion, buying seven laboratories in the USA and Canada in 1969, and finally buying Allergan, a eye and skincare product manufacturer, in 1982.

Parallely, chemist Thomas Beecham launched the Beecham's Pills business in UK in 1942, starting out by selling laxative pills. The product was widely successful, and the company bought its first factory in 1859 to rapidly produce medicine. The company went through leadership changes in 1924, and bought various other companies to add products such as drinks and Eno, an antacid, and quickly expanded their international presence. The company only started to conduct research in 1934 when their first laboratories were built, and in 1945, the company's name was changed to Beecham Group Ltd. Through the 1950s and 1960s, Beecham Group Ltd. would make valuable antibiotics, such as ampicillin and amxoycllin, acquire companies to add drugs for allergies to their product line, and produce other products such as Aquafresh toothpaste. The company even sold soft drinks until 1986, including UK franchises for Pepsi and 7Up.



In 1988, SmithKline-RIT bought International Clinical Laboratories, its major competitors, and merged with Beecham Group Ltd. in 1989 to form a new business: SmithKline Beecham plc. The company moved headquarters to the United States, where it continued to buy new research centers and start philantrophic efforts, such as collaborating with WHO to eradicate elephantiasis.

THE MAJOR MERGER

In 1995, Glaxo and Wellcome merged to form GlaxoWellcome and by 1999 was the third largest pharmaceutical company in the world.

The mergers did not stop there, however, as in 2000, GlaxoWellcome and SmithKline Beecham plc. merged to form GlaxoSmithKline. Headquarters were moved to Brentford, London. The company would continue to acquire other businesses, such as Block Drug in 2001, produce valuable medicines and vaccines for H1N1 influenza and malaria, and spread their influence internationally.

GlaxoSmithKline has gone through its share of legal trouble in the 2000s. In 2010, the pharmaceutical giant paid \$750 million for selling contaminated products including

baby products. The products were contaminated at a factory in Puerto Rico and the plant was soon closed after numerous attempts to fix issues after an FDA investigation. GlaxoSmithKline was then fined \$3 billion for marketing anti-depressant drugs such as Paxil to teens and children without FDA approval. Other drugs, like Avandia, were knowingly sold even though GlaxoSmithKline knew the drug increased the risk of heart attack by 43 percent. The company went through controversies in other countries as well; for example, GlaxoSmithKline was fined \$490 million by the Chinese government for bribing doctors to prescribe the company's drugs and multiple executives were arrested for bribing doctors for sexual favors.

Glaxo Agrees to Pay \$3 Billion in Fraud Settlement

By KATIE THOMAS and MICHAEL S. SCHMIDT JULY 2, 2012

In the largest settlement involving a pharmaceutical company, the British drugmaker GlaxoSmithKline agreed to plead guilty to criminal charges and pay \$3 billion in fines for promoting its best-selling antidepressants for unapproved uses and failing to report safety data about a top diabetes drug, federal prosecutors announced Monday. The agreement also includes civil penalties for improper marketing of a half-dozen other drugs.

Aside from producing valuable medicine for the world, GlaxoSmithKline is actively involved in humanitarian aid and increasing access to medical aid. Once again with WHO, the company donated millions of tablets to fight lymphatic filariasis (intestinal



worms), and by 2014, the company donated over 5 billion treatments. Along with one of its competitors Pfizer, GlaxoSmithKline launched ViiV Healthcare, a company dedicated to help those with HIV. GlaxoSmithKline also cut drug prices by 20 percent in 50 of the world's poorest countries in 2009 and released rights to drug development to encourage research

towards neglected diseases. The company has also invested 20 percent of its profits from underdeveloped countries back into the country's medical infrastructure. GlaxoSmithKline has worked to increase transparency to the public by launching the Clinical Trial Register, a website with clinical trial data that anyone can access, in 2004.

Former CEO of GlaxoSmithKline Andrew Witty has publicly apologized and has worked to improve the integrity of the company. Witty says that the company has learned from its mistakes and GlaxoSmithKline implemented a compensation program that removed sales goals to prevent employees from doing unethical business practices as well as enforcing financial penalties for executives who do anything unethical. The company also took part in a five-year corporate integrity agreement with the federal government to help change its business practices. In January 2017, Emma Walmsley became the CEO of GlaxoSmithKline and became the first woman to be a CEO of a major pharmaceutical corporation. With its philantrophic efforts, structural changes, and medical breakthroughs, GlaxoSmithKline continues on the path to success.

GSK IN THE NEWS

China hits at GSK's systemic' bribery

Accusations of millions in 'illegal revenues'

China accused GlaxoSmithKins of earning billions of remainsh in "Blegal revenuese" through a programme of massive and systemic bribery" as it ratches and systemic bribery as it ratches and systemic bribery as the plantaneouticals group billions mit a superior of a "complete billion superior of public Security vestereday said systemic bright and been identified as part of a "complete bribery chain" that funnelled money to hospitals doctors and government officials between 2029 and 202 Mark Reilly, a Briton who was besid of the unit, ordered subordinates to offer the legal payments, they said.

The allegations will almost certainly lead to charges, which could strain China's relations with Britain Prime minister David Cameron had sought to limit any damage to the London based company.

Regulators in the US and UK are closely montering events in china and could alunch their own investigations, although a being the property of the prope

Malaria vaccine: GSK's thirty-year quest to eradicate a global killer

The thirty-year fight against malaria by GlaxoSmithKline has passed a major milestone with hopes for the first vaccine against the disease



A malarial mosquito



By Denise Roland 10:33AM BST 08 Oct 2013

GlaxoSmithKline's quest to find a malaria vaccine has survived two

Pharmaceuticals and Finance GlaxoSmithKline = Denise Roland

- ▲ Newspaper clipping of GlaxoSmithKline making one of the first malaria vaccines
- Newspaper clipping of GlaxoSmithKline fined by Chinese government for bribery

GSK and Pfizer launch joint HIV venture, ViiV Healthcare

Roger Pebody

03 November 2009

The pharmaceutical companies GlaxoSmithKline and Pfizer announced today that the joint venture created by the merger of their HIV divisions is called ViiV Healthcare. The deal was first announced in April, and aims to improve the two companies' position in the HIV market by cutting costs, sharing research and combining sales operations.

The new company has a 19% share of the global drugs market, in comparison to Gilead's 31%.

GlaxoSmithKline (GSK) will initially control 85 per cent and Pfizer the remaining 15 per cent of the shares, with the proportions rising or falling depending on the relative success of the two companies' drugs.

- ▲ Newspaper clipping about GlaxoSmithKline and competitor Pfizer coming together to form ViiV Healthcare for HIV research
- ▼ GlaxoSmithKline CEO Andrew Witty apologizes for company's unprofessional actions

GlaxoSmithKline chief apologises after company fined for mis-selling

Britain's biggest pharmaceutical company pledges overhaul after landing record £1.9bn fine in US



(i) GiaxoSmithKline chief executive Sir Andrew Witty promises action after the company was fined for mis-selling drugs in the US. Photograph: Linda Nylind for the Guardian

GlaxoSmithKline chief Sir Andrew Witty has expressed regret for the "unacceptable" mistakes which led to a record \$3bn (£1.9bn) fine for mis-selling drugs in the US, and vowed that a company-wide overhaul would prevent a repeat.

MEDIA PRESENCE

MEDIA STRATEGIES

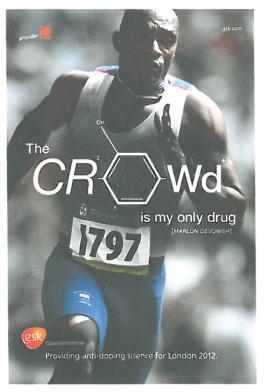
GlaxoSmithKline believes in transparency between the company and the consumers and they ensure that they achieve the goal in all possible ways such as having a significant social media presence and utilizing various advertising campaigns such as the Anti-Doping Campaign during the 2012 Olympic Games and in 2017, The Drama of RA campaign that promotes awareness and understanding toward rheumatoid arthritis patients and their symptoms.

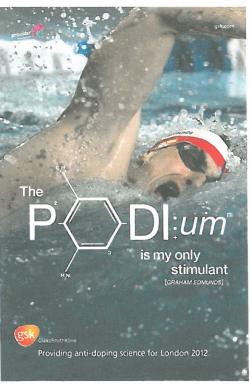
For promotion, GlaxoSmithKline has roped in several celebrities like Kapil Dev, Virendra Sehwag and Sachin Tendulkar (famous cricketers) for acting in commercials and endorsing its products. They also utilizes electronic media such as television and radio to promote nutritional healthcare products like Boost and Horlicks. Many of GSK's ads are printed in magazines, newspapers and displayed on billboards.

Like mentioned above, the two most famous campaign that GSK has ran recently is the 2012 Olympic Anti-Doping campaign, where they use many catch phrases and typography related to biochemistry to promote anti-doping during the games.

They also created a video ad that shows the effect of a crowd being like a drug and the inside a body, the crowd causes similar chemical effects. They not only advocated for anti-doping, but also provided the anti-doping science for London's 2012 Olympic Games.

Since GSK is a multinational company that has a global presence in nearly one hundred and fifteen countries, it is important to update consumers all





2012 London | Anti-Doping





2017 | The Drama of RA

around the world on their products. One main way the company does so is through social media.

"Social media enables us to interact and communicate with our customers in a way that traditional websites cannot. We use social media as part of our commitment to transparency and to provide timely information to our customers and stakeholders" - GSK

With 708 videos on their YouTube channel alone, GlaxoSmithKline made sure they covered all topics from Exploring Consumer Healthcare Products that helps the consumer understand the product more, 60 Seconds of Science that educate the consumers on science and research topics, Full Year Results 2016, etc. GSK made sure they reach all consumer needs and also constantly update consumers on the newest research breakthroughs.

GSK's Consumer Healthcare has also consolidated its global agency roster to nine shops across advertising, digital, content, PR, expert marketing and shopper marketing to support its leading brands, such as Sensodyne and Theraflu. The consolidation was about "increasing the prioritization of digital and driving much better scale and efficiency across the organization as we strive to become the best in fast moving consumer healthcare companies," said Sarah Hodson, the Global Lead of GSK's Category Communications and Contents. GSK, which is composed of three main groups, including consumer healthcare, pharmaceuticals and vaccines, spent \$2.457

billion in 2007, and the breakdown is

Magazines: \$387 millionNewspaper: 13 million

• Outdoor: \$900,000

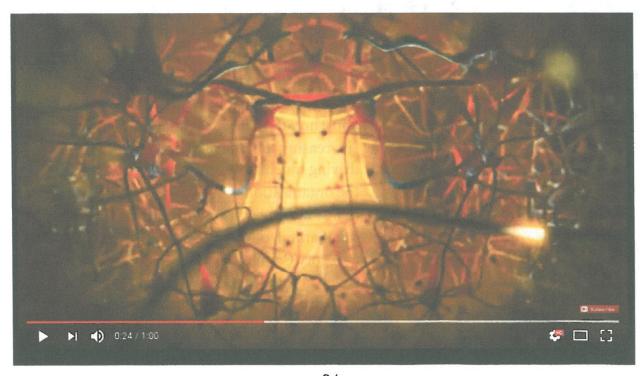
• TV: \$742.4 million

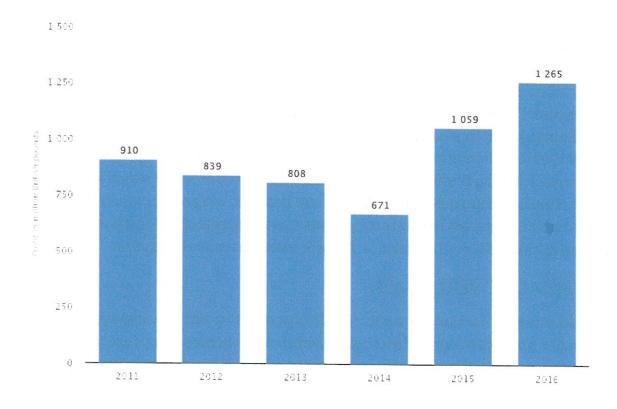
Radio: \$14.2 million

Internet: \$29.4 million

And that is when GSK cut spending in most media categories compared to 2006, with the exception of Spanish language media, radio spots and Internet advertising.







Above is the GSK's advertising spending from 2011 to 2016 (in million British pounds). In summary, although GSK has been increasing spending since 2011 from the above data, in 2016, GSK spent 1.69 billion on advertising, which is way less than back in 2006, where GSK spent 2.505 billion on advertising. GSK has been significantly cutting down on their advertising spending for the past 10 years.

GSK start to rely more on their social media and digital presence other than their usual TV ads and printed billboard campaign.

OUR PROPOSAL

GSK should definitely use less media advertisement or keep it constant because of the amount of clutter online. Everyone tries to see through the clutter, but with the amount of advertisement online nowadays, especially YouTube videos and just social media in general, it is hard for people to sit down and pay attention. Therefore, GSK should first increase name brand recognition before going on to product advertising.

Here is some proposals that GSK can use:

SOCIAL MEDIA

Should be the main eye catcher instead of giving information. The GSK website is pretty much where all information is stored, therefore, spreading it out to different social media sites not only increases the clutter, but also makes it hard for someone to look for information. So instead of posting large amount of information, GSK should post something absurd that catches people's attention, and then direct them to the GSK website, where all information is stored. For sites such as instagram, having an image that is eye catching is even more crucial since most people do not usually follow pharmaceutical companies at random. There has to be a reason in which they follow, and sometimes just having aesthetic photos that attracts people to follow will ultimately end up having GSK on their feed, which will increase name recognition.

PHYSICAL ADVERTISEMENT

Should continue the campaign with The Drama of RA or similar campaign to educate the public on diseases and other medical information because those are facts that people who are waiting by the street will be willing to gain in a few minutes. The image on the advertisement should also be absurd or extremely eye catching, which GSK did a good job with through The Drama of RA campaign.

TV/RADIO

GSK should utilize television more or online video streaming ads, such as YouTube videos online (not as videos, but as Ads). The video should be less than 10 seconds with some absurd concepts that catches the consumer's' attention. Radio is also a great way on how GSK can get information out to the public. One always hear Kaiser Permanente through radios, and to gain brand recognition should be the main way in which GSK catches people's attention.

Overall, we propose various types of strategies to gain people's attention, but the main goal is to gain brand recognition. That is the main thing that is lacking from years of Ad that GSK has put on. Before the consumers buys GSK's products, it is probably because they have heard of it somewhere. However, if the brand recognition increases, then the public would buy anything GSK because they are familiar with the name, even if that means they are trying to use something they have never used before.

INFOGRAPHIC

VACCINES

#1 VACCINES: Prevnar

GSK has a broad portfolio and innovative pipeline of vaccines to protect people of all ages. We deliver over two million vaccine doses per day to people living in over 160 countries.

GLAXOSMITHKLINE

GSK aim to bring differentiated, high-quality and needed healthcare products to as many people as possible, with our three global businesses, scientific and technical know-how and talented people.

"IS EVERYTHING RIGHT? NO. DID WE MAKE MISTAKES? YES. DID THINGS GO WRONG? YES." - WITTY

FRAUD 2010

- Paid off doctors to recommend their - Fail of it doctors to recommend their products to recommend their products to consumers.

 - Illegally promoted the antidepressant drugs to patients under the age of IB. Never approved by FDA.

 - Largest healthcare fraud settlement in U.S. history.

KEY COMPETITORS

Johnson-Johnson







UNOVARTIS

MARKET PERFORMANCE

Glaxo entered the New York Stock Exchange in December 9, 1977 at a opening price of \$0.67. Since then, it has climbed to a peak of \$75.18 on January 9, 1999 and as of December 1 is priced at \$35.32.

Over the past few decades, GSK stock followed the flow of the business cycle, going up with the stock market booms and down during the recession. The stock reached its highest peak during the boom of 1999 and took a downturn with the rest of the market in 2002.

GSK STOCK HISTORY

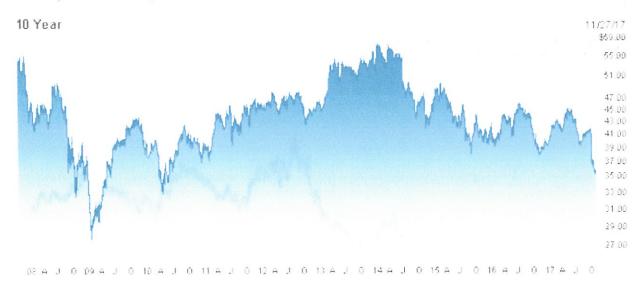


In the final two months of 2008, the company suffered in sales as three of their drugs: Zofran, Lamictal, and Valtrex, came off their patents. The company was forced to cut 820 employees as it closed down the production site in Danford. The stock plunged further as the world went into a recession in 2009, dropping to its lowest point in the 21st century at \$28.74. GSK implemented a plan that would cut costs by £1bn a year by laying off 3,000 employees from 2009 to 2010. The company also began to diversify, investing in areas such as Emerging Markets, Consumer Healthcare, and Vaccines. The diversification helped to reduce risk through lower sales volatility, allowing GSK to absorb the impact despite losing more than £1 billion of sales. As a result, GSK maintained the support of its investors and the stock began to climb upward, rising to \$42.80 by the end of 2009.

Despite the scandal in China, the company still had an exceptional year in 2013. Six major products were approved by the US, almost a fifth of all regulatory approvals in the country. Return on research and development improved to by 1%, rising from 12% to 13%. Profits rose 1% to £26.5 billion, lifting pre-tax profits by 0.7% to £6.6 billion. The

stock price rose from \$44.02 to the highest point in the past decade, \$56.40, in early 2014. However, in July 2014, the stock plunged 10%, falling from 53.72 to 48.60 in just one week. One of its key drugs, Avadir that made up about 20 per cent of GSK's revenues, continued its poor sales performance over the last 3 months. In addition to the effect of a strong pound, Advair sales in the US dived 19 per cent in the quarter ended in June, which greatly worried investors.

GSK (10 YEARS)



In the past year, the stock has risen from \$38.49 up to \$44.44 in early June and has dropped down to \$35.32. During the first quarter, GSK was driven by strong sales of new HIV products, Tivicay and Triumeq, driving the stock higher than expected. Fueled by the managerial team's decision to spend more on mergers and acquisitions along with the promising results of the single-tablet regimen for HIV, the company's stock continued to rise, increasing by 8.33% in May. However, the stock fell in July after the company reduced its guidance for full-year earnings growth due to its increased investment in HIV treatments. After the plunge, the company got back on track in the 3rd quarter as the new products recording £1.7 billion in the sales. The stock increased steadily until shares plummeted 6% in extremely heavy midday trade Wednesday on concerns that the company's interest in Pfizer Inc.'s over-the-counter business. After the latest slide, GSK has fallen behind the rest of the pharmaceutical industry, which has experienced a 15% growth over the past year.

GSK (1 YEAR)



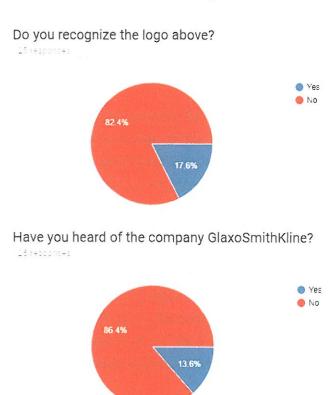
PHARMACEUTICAL INDUSTRY (1 YEAR)



Looking toward the future, GSK's numbers look far from impressive. The company's pharmaceuticals segment, which generates over half of total revenue, is growing by only 2%. The HIV drugs are growing at a 13% rate, but the segment is held back by drugs that are in decline. With Advair, one of GSK's highest selling drugs, going generic, the company has many sales to make up for. Furthermore, the latest free cash flow numbers fall far short of GSK's goal for covering the dividend and investing in growth with the leftover cash, worrying investors with a possible cut in the dividend in 2019. However, the company's restructuring and cost-cutting efforts are increasing free cash flow. By 2019, the company should be able to pay the current dividend without letting debt grow.

SURVEY RESULTS

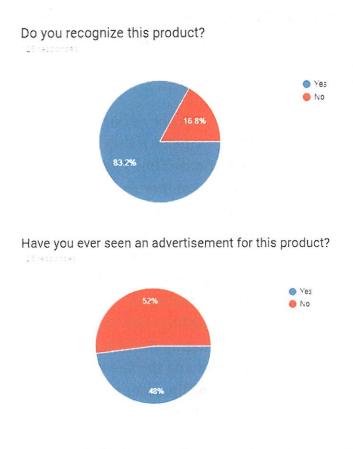
We conducted a survey to figure out how popular GlaxoSmithKline was in the United States, to see whether people recognized the GSK logo or at least some of their products, and what people's thoughts were on GSK and its products. We gave our survey to 125 high school students in the Cupertino Area, mainly Lynbrook High School students.



more visible. On top of that, a large portion of GlaxoSmithKline's products are medicines high school students don't often use and many of GlaxoSmithKline's products are popular in Asian and European countries, such as Boost and Horlicks. Interestingly, in response to our question about what people thought GSK did, most people correctly wrote that GSK was a pharmaceutical company. The other top choices include "tech" and "makes guitar picks."

In the first portion of our survey, we asked participants if they recognized the GlaxoSmithKline Logo and whether or not they recognized the company name. As expected, most of the participants did not recognize the GSK brand, with only 17.6% recognizing the logo and 13.6% recognizing the name GlaxoSmithKline. This is accountable by the demographics of the participants and the fact that GlaxoSmithKline does not have any products with it's name obviously visible on the front. Often times, GlaxoSmithKline puts its logo on the top corner of the packaging and the name of the product, such as Tums, is



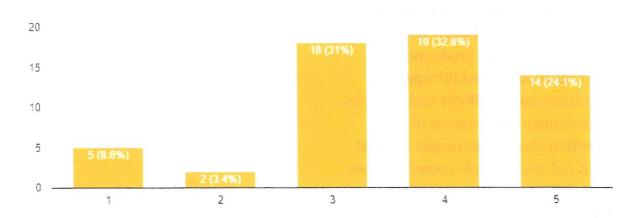


In the next part of the survey, we asked participants to write if they recognized GSK products. First, we asked participants to they recognized Tums, a popular antacid that is well advertised in the United States. As expected, 83.2% of participants had heard of Tums.

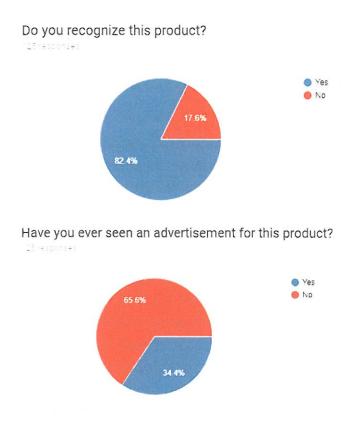
48% of all participants have also seen an advertisement for Tums, which shows that Tums has decent brand recognition in the United States. On a scale of 1-5, with '1' being the worst and '5' being the best, participants who used Tums before generally rated their experience with Tums quite highly, with 56.9%, or 33 participants, giving Tums a '4' or '5.' It's clear that when

many people look towards Tums when they need an antacid, and most love the product.

If you have used this before, how would you rate your experience with it?

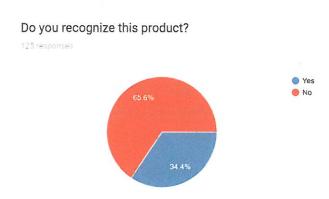


We also asked participants if they recognized the Aquafresh product, a GSK-owned toothpaste, their experience with the product, if used, and whether they had seen an advertisement for the product or not.



Similar to Tums, 82.4% of participants recognized what Aquafresh was and 54% of those who used the product rated it a '4' or '5'. However, only 34.4\$ of the participants had actually seen an advertisement for the product, even though the two products seem to be equally popular. This could be accounted for by the fact that many of our survey participants shop at Costco Wholesale, which often sells Aquafresh and includes the product in its monthly coupons. Thus, while participants might have never seen an actual advertisement, it is possible that they seen and used the product at a store directly. Furthermore, because our survey consisted of high school students who rely on their parents to

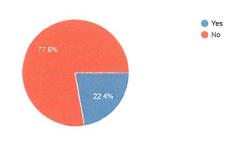
buy toothpaste, it makes sense that GSK's Aquafresh advertisements are not targeted towards high schoolers, but their parents instead.



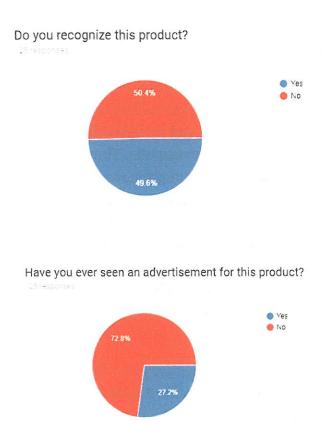
Our next product we asked participants about was Horlicks, a malt-based drink that is popular in Asia and Europe. As expected, only 34.4% of participants recognized what Horlicks was, and only 22.4% of participants had ever seen a Horlicks advertisement. Interestingly, a

large percentage of those who had tried Horlicks before (65.8%) rated the product as a '4' or '5', which means that this low popularity is not because Horlicks is a bad product, but because people in the United States do not know it exists. Horlicks is not normally sold in popular

Have you ever seen an advertisement for this product?



supermarkets like Safeway and Albertsons, but is found in supermarkets like Indian Cash and Carry. This might explain why even 34.4% of the participants knew what the product was; Lynbrook High School has a high proportion of Asian students. Our survey confirmed that while many of GSK's products are popular in other countries, but not in the USA.



Our final product we asked participants about was Flonase, an allergy relief spray. The results from this survey were the most interesting because the brand recognition was split nearly in half, with 49.6% of participants recognizing the product. 69.2% of participants who used the product rated it a '4' or '5', showing that it is a good product. However, only 27.2% of participants had ever seen an advertisement for this product. These statistics are accountable by the fact that Flonase is more of a niche medicine than any of the other products on this survey. The only people who would be interested in Flonase would be those who need allergy relief, and nobody who needs this product would be interested in researching/looking up what Flonase is. Because it provides relief from

discomfort, it makes sense that such a high proportion of participants who used the product rated it highly - it improves their quality of life directly.

In summary, our survey asked participants about 3 types of products: popular medical/hygiene products, products popular in other countries, and niche medicine products. The popularity of each product reflects what the product is for, who it is targeted to (age-group), and where it is mainly advertised by GSK. Once again, our survey consisted of mainly USA high school students, who normally do not buy their own toothpaste, medicine, etc., which accounts for the low popularity of some products, since they don't have a huge say to their parents on what brand to buy, or simply do not mind the brand. However, across the board, those who used the GSK product rated it highly, showing that GSK's products are of high quality and their generally low popularity does not imply inferior quality.



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