

LCBB5008

Management Economics

Assessment 1

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Table of Contents

Introduction	2
Description of the Business and Its Main Product	3
Demand and Market Equilibrium	4
Price Elasticity of Demand	8
Conclusion	10
References	11

Introduction

This report is going to use Tagrisso, a cancer med produced by AstraZeneca to identify its market demand and market equilibrium. It will demonstrate how different factors can impact market demand and influence the pricing policy, supply and consumer demand for the product. It will also evaluate factors that influence the price elasticity of demand for Tagrisso.

Description of the Business and Its Main Product

AstraZeneca is a British-Swedish multinational pharmaceutical and biotechnological company. It is headquartered in Cambridge, England. It is operating in the pharmaceutical industry of the UK and was founded in 1999. Currently, 83,000 employees are working for the company. AstraZeneca has an average annual revenue of \$44.4 billion with a net income of \$3.6 billion (AstraZeneca, 2023). Due to its quality products, it has good product demand in its target market. Though the pharmaceuticals is known for various drugs and medicines that it produces and supplies in the market to fulfill consumer demand, one of its top selling product is Tagrisso which is a drug used for treating patients diagnosed with lung cancer. This product is among the top drugs used by medical professionals and care facilities to treat patients who are diagnosed with lung cancer.

AstraZeneca's lung cancer med Tagrisso is an important product for its big sale ambition and staving off cancer growth twice more effectively than its previous cancer meds. It has been identified by medical professionals as a new standard of care for patients who are suffering from lung cancer and are looking to recover. AstraZeneca has estimated a \$45 billion revenue goal through the sale of Tagrisso at the end of 2023 (AstraZeneca, 2023). The revenue earned from the sale of Tagrisso is expected to take over the revenue earned by previous top selling drug Crestor of AstraZeneca (Patel et al., 2020). Considering the current market demand of Tagrisso, the company is utilizing its resources to increase the production of the drug to meet consumer demand. Using excellent R&D facilities, AstraZeneca is conducting quality market research to increase product sale, identify consumer demand and improve product quality. Tagrisso has been a key product for the company in increasing its brand value, consumer involvement, financial growth and achieving a competitive advantage in the pharmaceutical industry of the UK.

Demand and Market Equilibrium

Demand can be identified as demand of a specific product among the selected audience of a company as they look forward to purchase the product to fulfill their needs. This can be determined by how the consumers are willing to purchase the product within a selected price range (Hildenbrand, 2016). With increasing market demand for a product, the overall price of the product increases. Market equilibrium is a state in which product supply and market demand balances each other, resulting in a stable product price (Stackelberg, 2014). Excessive supply of a product can reduce its price which can result in increasing demand among the consumers while less product supply can increase product price and result in less demand among the target audience. Market equilibrium is necessary to create a balanced market that supplies sufficient product to the consumers at a flexible pricing policy. The demand and market equilibrium of AstraZeneca's cancer med Tagrisso depends on the following factors.

Price of Substitutes

The current substitutes of Tagrisso is Opdivo which is a cancer med from Bristol-Myers Squibb Company, Lumakras which is the cancer med from Amgen and Alimta from Lotus Pharmaceuticals. The cost for Tagrisso 40 mg oral tablet is \$16,999 for a supply of 30 tablets (AstraZeneca, 2023). The cost for 10 mg/mL Opdivo is \$1297 for a supply of 4 milliliters (National Health Service, 2022). The price of 120 mg oral Lumakras tablet is \$21,186 for a supply of 240 tablets. The price of 100mg Alimta injection is \$40 (Sharma et al., 2019). Comparing the price of Tagrisso's substitutes, it has higher price than any of the product. As market equilibrium suggests that the increasing demand of a product results in increasing supply which reduces overall product price in the end. The demand for Tagrisso as a cancer med is comparatively higher than any other product in the market currently. Other cancer meds has less possibility of decreasing product price due to less market demand. On the other hand, the increasing popularity of Tagrisso indicates that AstraZeneca will reduce the product price in the upcoming days.

Price of Compliments

Being a cancer med, Tagrisso doesn't require other medical drugs as complementary product. However, Tagrisso plus chemotherapy can help lung cancer patients (non-small cell lung

cancer) to live longer without worsening their medical condition compared with the immediate effect of the cancer med alone (Huang et al., 2017). But chemotherapy cost in the UK is expensive if the patient decides to go to a private hospital which can cost up to £30,000 (National Health Service, 2022). According to NHS, chemotherapy cost in the UK can be £1.4 billion a year (National Health Service, 2022). For treating patients diagnosed with lung cancer, chemotherapy cost can range from £1000 to £12,000 for each monthly dose which is comparatively higher than other European countries (Huang et al., 2017). This indicates the complementary service of Tagrisso has high pricing range which isn't affordable to many consumers using the cancer med. This can reduce the demand of Tagrisso in the market.

Consumer Income

During the COVID-19 pandemic, the consumer expenditure of the UK pharmaceutical sector increased a lot which had a huge impact on their income. After the pandemic, UK is going through an unstable economic situation which has reduced the income of many consumers of the pharmaceutical industry (Howarth et al., 2021).

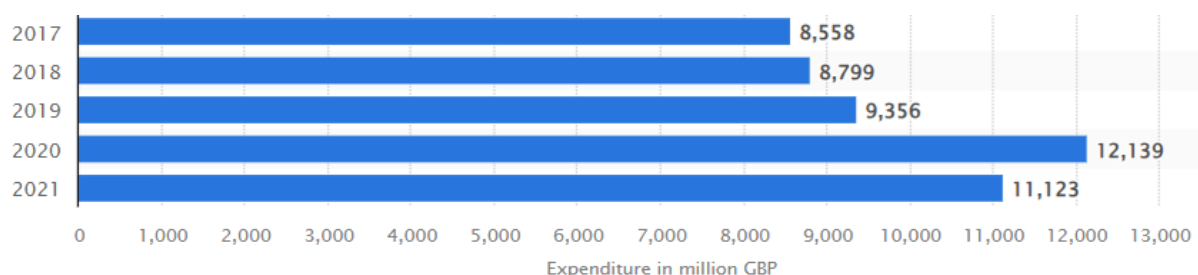


Figure 1: Consumer Expenditure of the UK Pharmaceutical Industry over the Last 5 Years (Statista, 2022)

Considering the impact of Brexit on the UK economy, the pandemic has dealt a final blow which is the significant reason behind major inflation in the UK and EU zone. As a result, a large number of current consumers of Tagrisso are going through vulnerable economic condition due to less income. Their current income is 8% lower in 2023 compared to their annual income in 2019 (Statista, 2022). Since market inflation has increased the price of raw material, decreasing consumer income can have a negative impact on the demand of Tagrisso's consumers.

Consumer Tastes and Preferences

Tagrisso is being used to treat more than 700,000 lungs cancer patients worldwide as AstraZeneca explores the cancer med as a treatment for patients with multiple stages of

EGFRm NSCLC (AstraZeneca, 2023). The cancer med was approved as monotherapy in more than 100 countries such as the US, China and Japan (Fischer, Klein and Childers, 2018). As it is used to treat patients with advanced or metastatic EGFRm NSCLC, consumer preference play a key role in increasing the demand of the cancer med in its target market. More than 78% healthcare facilities in the UK are using Tagrisso to treat the patients while the number rises up to 63% in China (Statista, 2022). After purchasing and using Tagrisso, consumers are going through better recovery in terms of their physical condition which is the key reason behind the increasing demand of the product in the local and foreign target markets. Consumers now look forward to using medical drugs that are sustainable, less side effects and long term survival rate. Tagrisso was able to achieve unprecedented survival in early stage lung cancer treatment. More than 88% patients were alive for the last 5 years as they used Tagrisso in ADAURA Phase III trial (AstraZeneca, 2023). As the cancer med is adhering to consumer preference, the market demand of the product is constantly increasing in many countries around the world.

Consumers Expectation of Price

The pharmaceutical industry in the UK puts emphasis on consumers' expectation of price to determine product price and other pricing policies. After the COVID-19 pandemic, the industry is completely focused on developing medical drugs, medicines, antibiotics and other drugs using sustainable materials so that pharmaceuticals could set an affordable price for their product (UK Healthcare, 2023). AstreoZeneca is among the top pharmaceuticals in the UK that prioritizes the financial condition of the target audience to develop its pricing policy. Since the target audience for Tagrisso are patients diagnosed with lung cancer, the pharmaceutical has used market research to understand whether the consumers are satisfied with the current price of Tagrisso or not.



Figure 2: Tagrisso's Consumer Expectations with Its Price (AstraZeneca, 2023)

Various research data has shown that 46% of consumers using Tagrisso are satisfied with its current price while 29% of the consumers aren't satisfied with the product price. 22% of the consumers want AstraZeneca to reduce the price of Tagrisso while the remaining 3% consumers want AstraZeneca to increase the price of Tagrisso (AstraZeneca, 2023). Since, a great number of Tagrisso's consumers are satisfied with the product price, it can be said that the current pricing policy is quite affordable for the target audience. But, a good number of consumers want AstraZeneca to reduce the price of Tagrisso which might affect the demand of the product.

Demographics

Currently, the number of buyers for Tagrisso is estimated to reach 700,000 considering its increasing popularity in the EU and Asia (AstraZeneca, 2023). The target demographic for the cancer med were elderly patients more than 40 and less than 65 years of age with a body weight more than 50Kg considering the side effects it could have on patients much older than that (Katayama, Lovly and Shaw, 2015). In recent times, Tagrisso is being used to treat patients bellow the age 40 in some parts of the UK, Europe and Asia. Over the last three years, AstraZeneca had to increase the production of Tagrisso as the demand for the product increased up to 27% (Statista, 2022). As market equilibrium suggests that increasing product demand depends on increasing consumers, Tagrisso has been a primary example of how consumers demand have allowed AstraZeneca to increase production for better revenue. Considering climate change, global pollution and heavy industrialization, the number of patients diagnosed with lung cancer has increased gradually over the last 5 years. According to a report by NHS, the number of lung cancer patients in the UK has increased up to 7% from 2015 to 2021 (National Health Service, 2022). The number is estimated to increase up to 14% in 2025 (National Health Service, 2022). As Tagrisso is currently the top cancer med to treat patients diagnosed with lung cancer, its buyers are increasing gradually and it is increasing the demand of the product in the market.

Price Elasticity of Demand

Price elasticity of demand is a measurement used to identify the change in product consumption in relation to a change in the price of the product (Friedel, 2014). When the price of a product is infinite (when demand changes with minimal price change), it is considered to be perfectly elastic. Price elasticity is used for understand how the supply of a product or its market demand could change when the company changes the price of the product. To identify price elasticity of demand, percentage change in quantity demand is divided by percentage change in price (Newbery, 2016). If price elasticity is more than 1, the product will be elastic and the product will be inelastic if the price elasticity is less than 1. If the product's price elasticity is 0, the product will be considered perfectly inelastic. If the price elasticity of the product is exactly 1, the product will be considered as unitary elasticity (Friedel, 2014). Product substitutions always impact the elasticity of a product, reducing the demand of the product when price goes high. The effect of demand and market equilibrium on the price elasticity of Tagrisso could be described using the following factors.

Substitution Effects

Product substitutions effects the elasticity of a product since consumers will try to use other products when the price of a product increases more than the expectations. This eventually reduces the demand of the product when price goes high, resulting in less supply and less profit. Being a cancer med, Tagrisso is a necessity product. It is being used in more than 100 countries to treat patients diagnosed with lung cancer (Patel et al., 2020). It has been among the top drugs used by medical professionals and care facilities in 2021 and 2022 to treat patients who are diagnosed with advanced or metastatic EGFRm NSCLC (UK Healthcare, 2023). Tagrisso is staving off cancer growth twice more effectively than previous cancer meds launched by AstraZeneca in the market.

At first, elderly non-LIS beneficiaries with cancer weren't using Tagrisso much due to its initial price which cost \$12,750 for a month's supply. After being approved by NHS and FDA as a top drug for treating lung cancer, the market demand for Tagrisso began increasing since 2017 and now in 2023 is \$16,999 for a supply of 30 tablets (National Health Service, 2022). As more than 88% patients were alive for the last 5 years as they used Tagrisso in ADAURA Phase III trial, it became top choice for healthcare professionals to treat lung cancer patients (AstraZeneca, 2023). This has reduced the market demand of its substitute

products such as Lumakras or Opdivo. As a result, the overall price elasticity for Tagrisso currently ranges from 0.72 to 0.75 which made the product inelastic (AstraZeneca, 2023). Inelastic products are necessities that don't have any acceptable substitutes. As Tagrisso has become an inelastic product, it is now a necessity for lung cancer treatment. This is increasing the demand, supply and sale of the product in its target market. This is providing AstraZeneca the opportunity to maintain flexibility with the pricing policy of Tagrisso as demand for the product will remain constant in the market even if the product price increases or reduces.

Percentage of Income

Since the target audience for Tagrisso are patients diagnosed with lung cancer, the pharmaceutical has used market research to understand whether the consumers are satisfied with the current price. 46% of consumers using Tagrisso are satisfied with its current price while 29% of the consumers aren't satisfied with the product price (Statista, 2022). A large number of consumers using Tagrisso have financial stability, making it easier for them to purchase the product even if it has a high price in the market. Tagrisso has become an inelastic product making it a necessity for lung cancer treatment. AstraZeneca can maintain flexibility with the pricing policy of Tagrisso as demand for the product will remain constant in the market even if the product price changes. As Tagrisso is an important drug for treating lung cancer patients, the consumers will have to buy the drug from the market even if the pricing policy isn't satisfactory for them. This makes the product inelastic as AstraZeneca can sale constant amount of Tagrisso in the market.

Pricing Policy for Tagrisso

The most suitable pricing policy for AstraZeneca with its cancer med Tagrisso can be Value-based pricing. This pricing policy allows a company to select product price based upon what the consumers believe the worth of the product is (Newbery, 2016). Tagrisso being an inelastic product, has good demand among the consumers worldwide. This reduces the products risk of getting substituted by other products in the market. Tagrisso has already created significant value among the target audience. AstraZeneca can identify the current consumer demand for Tagrisso along with the financial condition of its target audience to understand the worth of the product. This will allow the company to set a suitable pricing policy for Tagressso that covers up its production cost, satisfied the demand of the target audience and generates satisfactory profit for the company.

Conclusion

AstraZeneca's lung cancer med Tagrisso is an important product for its big sale ambition and staving off cancer growth. As the cancer med is adhering to consumer preference, the market demand of the product is constantly increasing. As Tagrisso is currently the top cancer med to treat patients diagnosed with lung cancer, its buyers are increasing gradually which is increasing the demand of the product in the market.

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