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## CatsVision: Smart Lens Marketing Plan

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# *CatsVision: Smart Lens Marketing Plan*

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## Executive Summary

CatsVision is a new product Samsung is interested in developing for improved visibility in low-light conditions. The product is a set of smart contact lenses with graphene coating technology to help generate sharper image for better vision in the people diagnosed with retinitis pigmentosa.

Retinitis pigmentosa is a genetic disease that leads to a breakdown and loss of cells in the retina. It is estimated to affect 1 in 3,500 to 1 in 4,000 people in the United States and Europe. This market segment is chosen to act as a launching vehicle for the product to gain acceptance information from the market as well as ramp up large scale manufacturing abilities. Retinitis pigmentosa is chosen as the primary target market segment for the introduction of the product based on best match of the consumer needs and product features. This product can then help create a path for a wide variety of new product segments.

Samsung has the right mix of research, development and manufacturing processes to mass produce the product. The product is just a concept as of now and thus we are in the innovator stage of product and technology life cycle. The SWOT analysis and porter's five forces are favorable for the product. The threat of new entrants, threat of substitution and power of buyers was evaluated to be low with the power of suppliers rated high. We believe the competitive rivalry is medium based on our analysis of the five forces.

The marketing mix for the product is also described in detail in this report. The product's technical details, a rough roadmap as well as the marketable features are identified and detailed in various sections of the report. The product can be marketed to the target consumers through collaboration with the ophthalmologists. Eye doctors and especially ophthalmologists are identified as key partners apart from the supplier to manage for the success of the project. The go to market strategy is also presented in the report to engage the ophthalmologists to promote the product and reach the consumers.

The report also presents the promotion, distribution and communication channels management for the success of the project. We determined that ingredient branding of the technology can help extend recognition and goodwill of the product. This would facilitate Samsung to extend the technology to consumer home entertainment segment.

# Introduction

This section introduces the company and the product.

## Company: Samsung

Samsung was founded on March 1, 1938 as a family owned business that dealt in dried-fish, locally-grown groceries and noodles. Samsung entered electronic market and Samsung Electronics Industry Co Ltd. was founded on January 13, 1969 with headquarters in Seoul, South Korea. The company's history from 1969 to present day is published on their website with key milestones highlighted in various era's of company's history. Samsung was offered for public trading internationally in various markets during different phases of company expansion. Samsung categorizes its businesses in three main business areas. These are as listed below:

1. Consumer Electronics: This business area includes consumer electronics like television, air-conditioners, home range appliances, refrigerators and other smart household products. This business area also encompasses healthcare and medical equipments market.
2. Information Technology & Mobile Communications: this business area includes the handheld devices, IOT devices, network communication systems, computers and cameras.
3. Device Solutions: this business area includes the memory systems, system level large scale integrated circuits and foundry solutions.

Samsung publishes its philosophy, mission and vision statement on their website. Samsung's business philosophy is to devote its talent and technology to creating superior products and services that contribute to a better global society and sets goals for management, goals for employees and social responsibility goals.

### **Samsung Vision - "Inspire the World, Create the Future".<sup>[1]</sup>**

*The Vision 2020 is at the core of our commitment to create a better world full of richer digital experiences, through innovative technology and products.*

*The goal of the vision is to become a beloved brand, an innovative company, and an admired company.*

### **Samsung Mission statement:**

*Inspire the world with our innovative technologies, product and design that enrich people's lives and contribute to social prosperity by creating a new future.*

The earning, revenue and financial data and estimates are readily available on the net due to the company being a publicly traded corporation. For the purposes of the project based on the public information on Samsung, we determined that the project

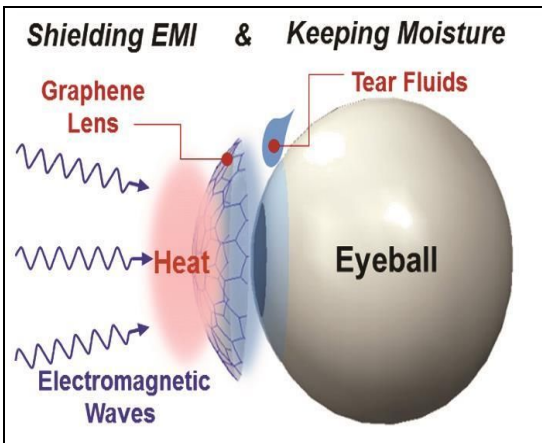
would be funded by the R&D department in the consumer electronics business area. Appendix A show the earnings and revenue for Samsung for 2018 alongside the market expectation in US.

**Core Competencies**

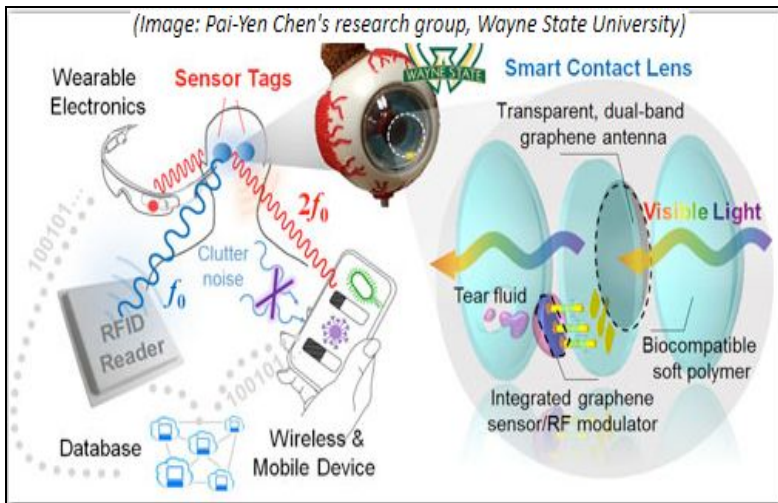
Samsung is confident it can mass produce the product due to advanced development and manufacturing processes at Samsung. Samsung has a well developed process for establishing and running manufacturing operations processes that can be regarded as core competencies for Samsung. Samsung has semiconductor and other manufacturing facilities that can be leveraged to establish and ramp the product. Samsung has an integrated platform solutions for many Samsung features and products and the product can be integrated into the consumer electronic business area.

**Product: Smart Lens**

CatsVision smart lens is a lens which helps in improving the vision during low light or night vision. It is a smart lens with two thick layer of graphene coating. Graphene has unique quality that when photons are hit on the lens than electrons absorbs the energy and becomes a hot carrier. Then the result is measured, analyzed, processed and output is generated in the form of image. But graphene is so thin that it absorbs only 2.3% of energy hits it. So, we are using two thick layer of graphene which will improve the vision [6]. Graphene helps to protect the eyeball from both strong electromagnetic wave (similar to the 4G and Bluetooth communication



frequencies) which can cause damage and dehydration discomfort. It has a



room-temperature light sensor that doesn't require heavy cooling equipment to function. The product comes with a UV filters so can be used in day time. Graphene helps to change the focal length of a polymeric soft contact lens in order to adjust near- and farsightedness. That means a single contact lens could be multifocal because an active graphene membrane

can change its curvature reversibly from flat to a concave or convex shape under an electrical bias [7]. Also, the lens comes with a prescription as most consumers need vision correction of other eye conditions.

Smart lens is a new technology where a transparent, self-powered and flexible wireless biosensors integrated into human eye, without the need for power sources (e.g. draws power directly from the radio signals) figure [8]. The image shows that it is fully passive, transparent and conformal graphene harmonic sensor designed for monitoring and wireless biomedical sensing in the left panel. The right panel illustrates an eye-wearable device (smart contact lens) based on the all-graphene harmonic sensor, which will help in detecting the real time scenario [7]. This wireless model helps in storing and retrieving the important data which can be accessed through any wireless devices. We can monitor the health of the lens, health of eye ball, our prescription number, etc. through wireless device.

### Technology Adoption Lifecycle Curve

Samsung is global company and has various products worldwide. An analysis of Samsung's life cycle adoption curve reveal that the company is in peak of its early majority in business segments like Consumer Electronics, Mobile Communications, Semiconductor devices. But for CatsVision Smart contact lens Samsung is in early innovator stage.

It is just a birth of a new product and still in research and development phase. New ideas are generated depending on gaining needs and knowledge factors. Depending on the resource allocation and also the change element, the time taken in the innovation stage as well as in the subsequent stages varies widely.

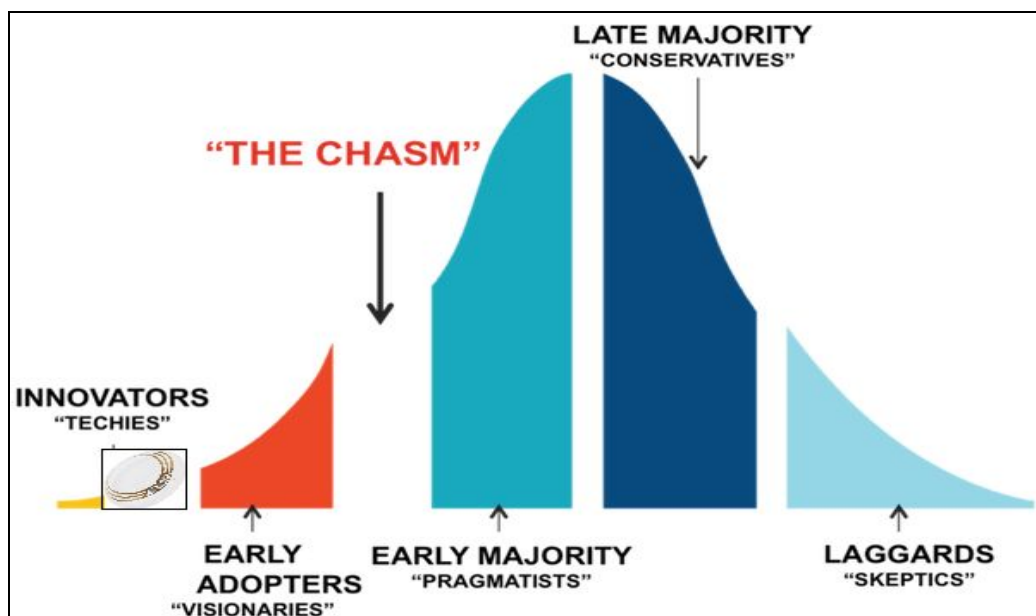


Fig: Technology Adoption Lifecycle Curve for CatsVision Smart Lens



## Value Proposition: Customers

The product promises to provide increased comfort in night vision. It is lightweight and discreet solution as compared to traditional night vision goggles. The contact lenses solution for low light vision issues also extends the benefits of contact lenses by eliminating the interference with depth perception and peripheral vision as observed in night vision goggles. After analysing the survey, we were able to establish that the customers value the discreteness of the product as much as they value the correction and ability provided by the product to navigate life.

## Value Proposition: Samsung

Samsung is a leader in consumer electronics.<sup>[3]</sup> According to Market Research Future Analysis, Home Theatre Market has been valued at approximately USD 31 Billion by the end of forecast period with approx. 19% of CAGR during forecast period 2018 to 2023.

Market Research Future (MRF) recognizes the following companies as the key players in the home theatre market – Bose Corporation (U.S.), LG Electronics (South Korea), Panasonic Corporation (Japan), Samsung Electronics Co., Ltd. (South Korea), Sony Corporation (Japan), Akai Electronics (Japan), Koninklijke Philips N.V., (Netherlands), Bowers & Wilkins (U.K.), Atlantic Technology (U.S.), Toshiba Corporation (Japan) among others.<sup>[4]</sup>

The CatsVision smart lens project can fulfil the following purposes for the company:

- Scope the interest and acceptance for the product type
- Ramp up manufacturing for graphene based devices
- Use the technology for shaping products for integrated home entertainment market segments to offer better cinematic and/or gaming experience.

We evaluated a large number of segments like law enforcement, military, commercial drivers, runners, wildlife observation enthusiasts and hunters to find the right match to introduce the product to achieve above mentioned goals. Based on the match between the needs of each segment and the product features along with a strong value proposition and branding strategy (discussed in later section), the small niche market for vision needs of people suffering from Retinitis Pigmentosa was selected as the target market.

## SWOT Analysis

We used SWOT analysis technique to identify strengths, weaknesses, opportunities, and threats for the CatsVision product. The following sections provide the strengths, weaknesses, opportunities and threats to device the strategy for the product.

**Strengths:** We identified the following as our key strengths.

- The product is made feasible by the breakthrough in patented graphene coating technology. The unique patented technology allows a thin coating of graphene to be effectively used to transmit information.
- Samsung has the big company benefits like resource abundance and process excellence. These aspects can help Samsung achieve competitive advantage in the market.
- Samsung has manufacturing facilities and processes it can leverage to ramp up production.
- The consumers do not have a better option to fit their needs right now. Our product is a solution for them with compelling value proposition.
- Samsung has a good reputation and it can be used to position the product.

**Weaknesses:** We identified the following as our weaknesses.

- The product can have unintended effects associated with contact lenses like dry eye syndrome, risk of increased exposure to electromagnetic radiation.
- Investment in complementary products are needed for lenses. Some people associate the recommendations for hygiene and complementary products like lens solution as a barrier to adopting the contact lenses.
- We also recognize that software incompatibility with other smart devices can limit the consumers from receiving the support and complementary software solution in the first release.

**Opportunities:** As explained in the value proposition for Samsung, we identified a few opportunities we can work towards with this product.

- The “CatsVision” product can help Samsung break into new market segment. It also presents us with the potential for first mover benefit and creating a dominant design in smart lenses.
- The product can be used as a launch and ramping vehicle for integrated augmentation of existing entertainment products: enhanced TV experience, gaming consoles etc.

**Threats:** We identified the following as threats for our product.

- Some of the major technology firms are also breaking into smart contact lenses which increases the threat of acquiring skills to compete in the augmented entertainment products that Samsung ultimately wants to break into.
- There is threat of the technology not scaling for mass production or scarcity of material resources for supporting a large scale manufacturing of product.

## Porter's Five Forces

Porter's Five Forces Framework is a tool for analyzing competition of a business and, therefore, the attractiveness (or lack of it) of an industry in terms of its profitability.<sup>[5]</sup> The five forces were evaluated by us and are presented in the following sections.

### **Threat of new entrants: Low**

Profitable industries yielding high returns attract new firms. New entrants eventually decrease the profitability for other firms in the industry.

We believe the patents and trademarks for the technology would deter imitation by new entrants to offer similar products in the market. Development of technology requires high investment in R&D to create a similar product. For a new start up the government regulations and insurance company requirements can be difficult to meet thus acting as a barrier to entry. We thus rate the risk of new entrants as low.

### **Threat of substitutes: Low**

Our analysis and survey with the ophthalmologist showed that the people suffering from retinitis pigmentosa do not have many options. The eyeglasses they currently use are bulky and a large number of consumers defined those as hideous. We are certain our product has an edge over the existing options and our patents protect our product from imitations. Thus we rated threat of substitutes as low.

### **Power of customers: Low**

We deduced that we have low competition due to lack of substitute products, patent protection and high cost of entry. We also have a differentiated product which is known to reduce customers' sensitivity to high prices. Catsvision satisfies customers' unique needs better than competitors' offerings and thus are most likely to become the preferred choice of consumers. All these allow us to rate power of customers as low.

### **Power of Suppliers: High**

Graphene is critical for product development. It's availability is critical for the success of smart contact lenses. The UV protective coating for contact lens is also a specialty product. This gives the suppliers of these materials high power to command a premium price for the components that we have determined to be critical for the product.

## Competitive Rivalry: Medium

In the porter's five forces analysis, we found that the threat of new entrant, threat of substitution and power of customers is low. The suppliers have high power in this situation and are critical partners for the project. The suppliers have to be aligned alternate sources should be developed to balance the power. The suppliers are also the exposed section of the process and can be sought and contractually bound by competitors to buy time and resources to create a competing product. Thus we believe competitive rivalry is medium for this case.

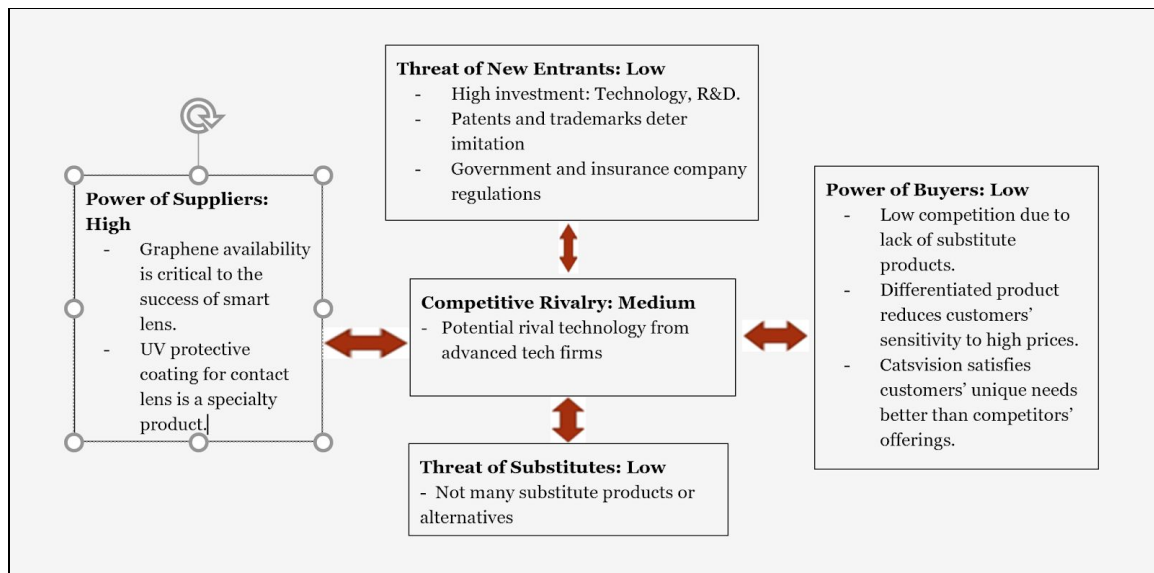


Fig: Porter's five forces

## Market Segment

Primary Market Segment is Retinitis Pigmentosa people who have a genetic form of night blindness. Secondary Market Segment is people who are experiencing onset of cataract. These segments are not so big. On the other hand, these are so close to major focus of product/technology itself. Hence, even if the market is not so big, there is a better possibility in sales since technology covers major needs of these segment customers most closely. The problem is density of customers in one segment may dominate the production capacity which may cause a customer dependency. Market will be discussed more deeper in further parts.

## **Demographics**

### **Retinitis Pigmentosa:**

Rare, genetic disorders that involve a breakdown and loss of cells in the retina. It is estimated to affect 1 in 3,500 to 1 in 4,000 people worldwide. There is no specific race associated with Retinitis Pigmentosa, it usually appears among patients in their childhood, while others experience vision loss in their adulthood. Also, there is no defined gender affected more by the condition.

### **Cataract:**

Is the clouding of the eye's natural lens. It affects over 24.4 million US americans age 40 and older, also it's the main reason for blindness around the world. After the age of 65, over 90% of people develop a cataract, and it is slightly more common in women than men. This illness is closely related to age, the older people get the most likely they are at developing cataract at some point in their lives.

## **Market Definition**

### **Retinitis Pigmentosa**

Retinitis pigmentosa, or more correctly retinopathia pigmentosa, is a hereditary, progressive disease of the eye. Due to a malfunction in the metabolism of the retina, the sensory cells (rods and cones) are not sufficiently supplied with blood and hence gradually degenerate. The many forms which this disease takes make it impossible to give an exact description of the symptoms. Initially, the function of the rods is impaired. Increasing difficulty is experienced with twilight and night vision, extending to total night blindness. There is a gradual contraction of the visual field from the periphery inwards until the patient is left with "gun barrel" vision. Orientation then becomes very problematic. A further symptom of RP is reduced cone function. Reduced visual acuity, deterioration in visual contrast and color, and a high degree of sensitivity to glare are the result. Special filter lenses often provide enhanced wearing comfort [10].

A number of services and devices are available to help people with vision loss carry out daily activities and maintain their independence. In addition to an eye care professional, it's important to have help from a team of experts, which may include occupational therapists, orientation and mobility specialists, certified low vision therapists, and others. NEI has more information on living with low vision [11].

### **Children [11]**

Children with RP may benefit from low vision aids that maximize existing vision. For example, there are special lenses that magnify central vision to expand visual field

and eliminate glare. Computer programs that read text are readily available. Closed circuit televisions with a camera can adjust text to suit one's vision. *Portable lighting devices can adjust a dark or dim environment.* Mobility training can teach people to use a cane or a guide dog, and eye scanning techniques can help people to optimize remaining vision. An NEI-sponsored clinical trial found that a daily dose of 15,000 international units of *vitamin A* palmitate modestly slowed the progression of the disorder in adults. Because there are so many forms of RP, it is difficult to predict how any one patient will respond to this treatment.

### **Adults [11]**

An artificial vision device called the Argus II has also shown promise for restoring some vision to people with late-stage RP. *The Argus II*, developed by Second Sight with NEI support, is a prosthetic device that functions in place of lost photoreceptor cells. It consists of a light-sensitive electrode that is surgically implanted on the retina. A pair of glasses with a camera wirelessly transmits signals to the electrode that are then relayed to the brain. Although it does not restore normal vision, in clinical studies, the Argus II enabled people with RP to read large letters and navigate environments without the use of a cane or guide dog. In 2012, the U.S. Food and Drug Administration (FDA) granted a humanitarian device exemption for use of the Argus II to treat late-stage RP. This means the device has not proven effective, but the FDA has determined that its probable benefits outweigh its risks to health. The Argus II is eligible for Medicare payment. There are also some new surgeries options with viruses to heal the broken genes and these are \$400 K nearby.

### **Market Size - Potential**

It is estimated that Retinitis Pigmentosa affects roughly 1 in 3000 people in world and there are 2 M ill people in the world and 110 K people of potential patients in US today since The US population is 328 Million people [2]. US number is considered as the primary market. Night vision contact lenses price is estimated as \$2500 by Samsung. Hence, primary full market size is approximately \$ 275 M for US roughly.

### **Market Size – Demand**

Since our product is on innovation stage and somehow very new for the people experience, market demand will be tried to discussed via other applications/products that explained under market definition. As indicated, mainly there are 3 type of demand for eliminating the illness by patients. One is treatment by therapy, this is long term and therapist oriented treatment and it consumes lots of time, effort and money. Second is some “helpers” like dogs, sight lasers etc. these are easy to use but their effectiveness are less. Since vitamin treatment is rarely useful some patients, lastly there is a surgery option but it is extremely expensive. Under this classification somehow most of ill people are willing to use one of each these options to reduce direct effects of the illness to patient’s daily life. Since there is no exact numbers for the usage/preference of the options our team decided to make an assumption which 90% of ill people are willing to

use/buy/try an option to reduce the result of the illness in their daily life. This assumption makes 110 K people to 100 K, and market demand calculated \$ 250 M.

### **Customer Survey**

The survey was conducted by a doctor to his 5 RP patients face to face. Survey method is non-structured and has open-answer questions. They are all combined by the doctor as a summary.

### **A Priori Knowledge**

Doctors recommend surgery for some patients, but there are very few patients who are willing to do so. The operation of the disease is expensive and may require surgery again. The high cost of surgery may encourage insurers to purchase these lenses.

Alternatively, laser is now used instead of night vision glasses. It is easy for these patients to follow the laser light. It is quite common that lasers are a cheap solution. However, these lasers only help to progress, no obstacles, or are not enough for situations that require extra opinion. These laser devices have research and development projects on technological solutions on vibration or sound warning for such problems.

Many patients have night vision loss, as well as near and far vision impairment. In this sense, lenses can be the solution to multiple diseases. This will increase the likelihood of doctors prescribing and the desire to use patients.

### **Quantitative Results**

**Only 2 of the 5 patients thought positively to prefer only the lenses used at night. They said that although the insurance company did not pay for the product, it could buy and use it often.** They are a 30-year-old male and a 24-year-old female. The male said that he was wearing glasses and could start using lenses. A female person is currently using a lens for other eye problems during the day. Both of these people stated that a night vision lens that can be worn during the day will be perfect, which includes features that will eliminate other eye problems. Again, these people stated that they would buy such a product no matter the price.

**Two out of five respondents were neutral. These people stated that if the insurance company meets the cost of the lens, it will take and keep it but will not always use it.** They are a 50-year-old female and a 55-year-old male. Both of them

stated that a good night vision lens would be good for daytime wearing features that would eliminate other eye problems. However, if the insurance company does not meet the cost of the product, they said that they cannot buy. Last person found the product unnecessary.

The first four people saw the use of different lenses for other eye problems and night vision as inconvenient and unwilling. 5 people stated that night vision lenses would improve the nightlife quality. Again, all of these 5 people stated that the use of cars at night was the most important problems. The insurance company representative stated that a lens offering multiple solutions would be easier to pay.

### **Qualitative Results**

For technology perspective, Our product is night vision contact lenses. As explained in the previous chapter RP people cannot see in the dark properly. This eyesight illness happens genetically. Major reason is eyes cannot collect enough light to identify the objects clearly. This product aims to boost light level for RP people during the night. Thus, major need of the illness would be covered. Hence, eye sight could be enlarged during the nights for ill people. As a result patients will be able to see in quality. This match covers customer needs with proper technology pretty well. Furthermore, the technology is cheaper than other treatments (such as surgery) or useful rather than “helpers” (such as laser, dogs etc.) or easy to use in terms of time consuming (such as therapy etc.). Furthermore their commentary equipment is basic, cheap and easy to use: solution and cover box.

For social perspective, people in survey want to use the technology not only for specific times such as walking, driving in night. Furthermore, they do not want to seem weird while using a technology during the night and they do not want to come in sight with their illnesses especially in public places. As a result they want to use it during the all night time to be more social and independent. **Competitive advantage of the our product on the costumer side is obviously contact lenses are keeping privacy and illness itself outside of people reaction especially in social life by serving during the all the night.**

### **Analysis of Result**

In fact 4 of 5 people (80%) said that the product covers their needs properly. And they can use the product if the insurance companies will pay the fee. This is very promising result for the product. **We used this survey ratio to narrow general market**



numbers into particular and narrowed target number to describe the best promising further financial predictions for our company.

## Persona and Marketing Position

### Target Persona

The survey helped us shape our persona for the product. 20 to 50 aged woman/man who has RP illness, wants to be active, social and independent during the nights. The consumer is someone who values aesthetics and would want more subtle solutions to aid their vision without drawing attention to their condition.

### Target Market

Combination of market demand with survey result, we decided to use 80% ratio to calculate market target from market demand. As a result our potential customers are  $100\text{ K} \times 0.8 = 80\text{ K}$  in people and our target market 200 M in Dollars.

## Factors Guiding Purchasing Decisions

Based on the customer survey, we determined that the following factors impact the purchasing decisions for the consumers.

**Doctor's recommendation:** The diagnosis of the retinitis pigmentosa condition as well as recommendation for a product/solution to improve the condition of the consumer is provided by the ophthalmologist. The doctor's recommendation and relative comparison of the alternatives guides a consumers decision on the solution purchased.

**Insurance Coverage:** The insurance coverage of a product i.e. the out of pocket expenses made by the consumer is an important factor in making the decision to purchase the product. If insurance covers the cost of the product and makes the out of pocket expenses small for the consumer, the product is more likely to be adopted by the consumer.

**Recommendation of family and friends:** Most purchasing decisions are made based on the recommendation and reviews of family and friends. This becomes an avenue to reach potential consumers as the target segment is a genetic condition.

**Invasiveness of the solution:** Based on the survey and available data, non-invasive methods of correction are preferred by consumers over invasive options like surgery.

## Competitor Analysis

The rising demand for smart wearable devices has increased the demand for smart contact lenses worldwide. Market focused reports connected to the healthcare sector made accessible by Market Research Future which publishes reports on this

industry. has projected the market to touch USD 7.2 billion in terms of revenue by 2023 while growing with a CAGR of approximately 10.4% in the forecast period.

The smart contact lenses market globally has been segmented on the basis of the applications of the smart contact lenses which comprises of intraocular pressure monitoring, continuous glucose monitoring, and other applications. The other applications are sodium detection, cholesterol detection, and alcohol detection. The smart contact lenses on the basis of end users market are segmented into hospitals, home care settings and clinics.



## Market Analysis [9]

On the basis of various applications of smart lenses the key players in smart contact lens market are Zeiss, Google, Sony, Alcon, Sensimed SA, Alcon, Verily.

The main competitor to Samsung for its Catsvision smart lens is Zeiss.

**Zeiss** - It has come up with an i.scription technology which can help improve the vision for consumers at night and low light conditions with reduced glare effects, more vibrant colors and improved contrast perception for driving at night as well.

**Google** - It is an American multinational technology company which received a patent from the U.S FDA for smart contact lenses in November 2015. Google is partnering with **Norvatis**, which is a pharmaceutical company to develop smart lenses that can track diabetes by measuring blood glucose levels in tears and fix farsightedness.

**Sony** - Sony has created smart lens that is capable of recording video which can be controlled by user's deliberate blinks.

**Sensimed SA** - The SENSIMED Triggerfish smart lens captures spontaneous changes in the eye from day to night for continuous ocular monitoring system that helps physician in glaucoma treatment for patients.

**Verily** - Verily has partnered with **Alcon** to create smart lens that can measure glucose levels for people living with diabetes to help manage this disease.

As these companies are coming up with new technologies incorporated into smart lens, they can become a big threat to the Samsung's Catsvision product in near future. So to be ahead in this market, Samsung should be capable in adding new smart features in par with the features provided by the available competitors.

## **Marketing Mix**

### **Go-to Market Strategy**

The go to market strategy presents a step by step process to create awareness of the product all the way to deliver the product to the end consumers. We determined the following steps should be used to achieve the above mentioned goals for the CatsVison product.

Step 1: Educate academia and engage professionals by providing them free samples and demo so that they can get a real feel of the product.

Step 2: This academia and professionals will do their respective research and conduct paper presentation; and that's how the product will reach masses. This will also help in tying up with insurance companies.

Step 3: Professionals will educate the patients/customers by providing them free samples, demo and user guide. This will help in obtaining feedback from the user. Accordingly the changes can be made in the product. This route will help in improving the smart lens.

Step 4: Doctors will recommend the smart lens to the patients.

Step 5: Patients will buy the product through insurance.

### **Promotion**

The eye doctors and ophthalmologists would be prescribing these lenses to their patients suffering from retinitis pigmentosa or to patients facing night blindness. So they will be are key partners in reaching our target customers.

We are planning to promote these lenses at conferences to exhibit the advantages and key details of these lens to these doctors. This promotion strategy also includes supplying brochures or pamphlets for doctor's offices and for patients to define the product technology in complete details and also usage manual related to our product to educate customers. Posters to display in ophthamologists examination room to bring awareness and recognition of the innovative technology to meet our goal to

create ingredient branding for the technology. This would bring awareness to more people even when they are not the primary customers.

An advertisement can be published on social media, in newspapers and magazines to reach out the potential market segment so that the customers should know about this product. Day time television ads can be included to increase the magnitude of our promotion and to reach maximum population.

A feedback survey can be collected from the users and the customers reviews can be included into the promotion manuals to gain confidence and attention from most people.

## **Distribution Channel**

Samsung is well-known worldwide for its leadership in the technological and innovative area, it has an established distribution channel. Samsung will commercialize its products to the customers through direct and indirect channels.

- Direct channels: CRM software for sales force, website and company-owned retail outlets.
- Indirect channels: External retail outlets (Amazon, Ebay, Costco, Walmart, Target, pharmacies like: Walgreens, CVS, Rite Aid).

Additionally, Samsung manages existing distribution network due to their previous and current products. This is an advantage for the company because every time it develops a new product, it will be easier for them to distribute it in the market.

Samsung in 2014 launched the New Global Channel Program: SAMSUNG Team of Empowered Partners (STEP), an improved channel program that offers Samsung's increasing partner network with the resources and support needed to increase progress and expand their bottom lines. This program encompasses 4 levels of support based on sales volume and partner type, which covers from solution providers to system integrators. Every level offers some benefits like sales enablement, marketing, technical support and training. Step allows that every partner obtains benefits that match each of their business needs.

Since this product will be FDA approved and is prescribed by the Eye doctors, Samsung is also planning to collaborate with vision insurance providers as the eye care providers are in contract with various vision insurance providers. This vision insurance companies can provide these lenses at subsidized rate to the customers and can also share cost for the eye diagnosis session.

## **Branding Strategy**

Good branding increases the value of a company and makes it easier to bring in

new customers. A brand not only represents its logo, more importantly it embodies how people perceive the company.

A company's brand value depends on its reputation. Customers will pay more for a particular brand when the company has a recognized brand.

We believe that ingredient branding by branding the technology used in CatsVision product. We would use the success and goodwill generated from the primary segment to create awareness and recognition for the family of smart contact lenses products. This would help Samsung create awareness and reach a wide variety of audience. It can be leveraged to reduce barrier to entry in secondary markets.

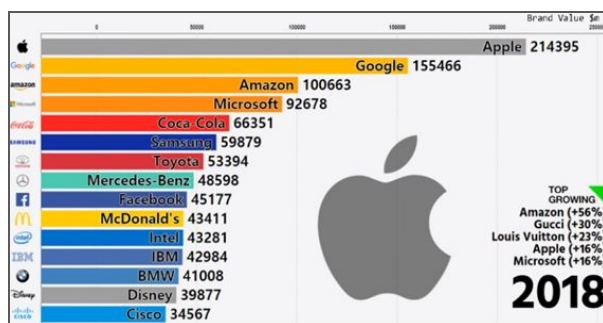
Marketers have acknowledged that it isn't enough for a company to create high quality products, but how customers perceive the value of the product that they will obtain. Samsung has worked untiringly to achieve this by implementing new branding strategies like:

- Establishing identity on the product.
- Cost involved in the repositioning of the product.
- Reaction from opponents or competitors.
- Techniques adopted in costing.
- Research and development.

In addition, for our product CatsVision smart contact lens, Samsung will adopt sponsoring. The executives are confident that through sponsoring worldwide events this would allow the brand Samsung to gain customer awareness of the contacts lens, that they feel identified with this product and will be willing to try it.

## Brand Value

Samsung is the second largest technology company in the world. It's ranked in 6<sup>th</sup> place according to the Best Global Brands 2018 Rankings (Interbrand website). Its brand value is worth almost \$60 billion dollars.



Source: Interbrand

## Samsung Electronics' Growth in Brand Value

Year	2012	2013	2014	2015	2016	2017	2018
Brand Value (USD; in millions)	32,893	39,610	45,462	45,297	51,808	56,249	59,890
Brand Rank	9	8	7	7	7	6	6

Source: Samsung

Key factors to the brand's success were innovative technology and improved competitiveness. The marketing area is constantly working on changing the client's perception to a more sensitive, and customer oriented brand. Samsung is focused on creating and enhancing new products / services to help customers solve everyday problems.

## Price

### Benchmarking the the Other Options

Basically there are three options. These are surgery, service dog and therapy. Surgery is expensive. It is \$ 200,000 for one eye. Furthermore insurance companies prefer not to pay for past cure ill people and there is 20% chance to lose eyes. And people do not like surgery. GuideService Dog is the second option and for these animals education and buying price are like \$ 15,000 in total. On the other hand annual expenditures are \$ 2500 for a year. Lastly living with a dog takes too much effort. Therapy is the third option and it is to accustom people live with the illness and to reduce the emotional/mental effects of the illness, Its average price \$ 6,000 and it continues during the several years.

### Estimated Price for the Product

Our price assumption relies on closet product prices. According to internet numbers in Amazon etc. Night Vision Glasses are about \$ 100 and Night Vision Binoculars are \$ 1,500 in average. Beside these, Smart Glasses such as Google Glass are \$ 1,500. Generally contact lenses are being changed 3-4 times in a year. Base on this information for a smart contact lens with night vision, our assumption \$ 1500 per contact lens for our annual product offerings.

## Product Roadmap: Future

Introducing the same smart lens with existing features to segments like runners, law enforcement and military. There are various incidences registered online mentioning the injury caused due to the ineffective vision sight during night or low-light. So, we would like to focus on this segment as they will be willing to pay on safety products. Secondly, law enforcement and military are using huge binocular type goggles for night vision. These goggles obstructs the view and are difficult to carry and wear.

Instead smart contact lens will be light weight, clear view, no obstruction, reduction in distortion, etc.

We would also like to have some add-on features in the existing product. The features like anti-glare coating for contact lenses with help in better vision during night time. giving an option of colored prescription lens for user. Also, updating a software applications which will have features like doing eye exercise and remind them about teardrops, etc.

## **Conclusion**

We believe that Samsung would be able to successfully penetrate the night vision correction market with the “Catsvision” product by partnering with vision insurance providers and professionals to hit market at the determined price.

We believe that the success of this product can be used as an indicator for gauging market readiness for smart contact lenses. The branding and success of the technology of Catsvision product can be leveraged to break into secondary segment.

# Appendices

## Appendix A

EARNINGS HISTORY					
	QUARTER ENDING 06/30/19	QUARTER ENDING 03/31/19	QUARTER ENDING 12/31/18	QUARTER ENDING 09/30/18	QUARTER ENDING 06/30/18
Estimated	718.865 KRW	863.434 KRW	1,671.001 KRW	1,929.637 KRW	1,692.498 KRW
Actual	-	750.955 KRW	1,239.000 KRW	1,924.000 KRW	1,621.420 KRW
Difference	-	-112.479	-432.001	-5.637	-71.078
Surprise	-	-13.027 %	-25.853 %	-0.292 %	-4.200 %

REVENUE HISTORY					
	QUARTER ENDING 06/30/19	QUARTER ENDING 03/31/19	QUARTER ENDING 12/31/18	QUARTER ENDING 09/30/18	QUARTER ENDING 06/30/18
Estimated	54,062,676 KRW	53,284,452 KRW	63,771,852 KRW	64,873,012 KRW	60,344,532 KRW
Actual	-	52,390,000 KRW	59,270,000 KRW	65,460,000 KRW	58,480,000 KRW
Difference	-	-894,452.000	-4,501,852.000	586,988.000	-1,864,532.000
Surprise	-	-1.679 %	-7.059 %	0.905 %	-3.090 %

\*\* Average Estimates in Million

\*Source: Business Insider



## References

[1] Samsung Website (Reference for Vision, Mission Statement and History of Samsung)

<https://www.samsung.com/us/aboutsamsung/>

[2] Samsung public financial profile

<https://markets.businessinsider.com/stocks/samsung/company-profile>

[3] Samsung is a leader in consumer electronics

<https://www.businesswire.com/news/home/20170713006140/en/Top-5-Companies-Global-Consumer-Electronics-Telecom>

[4] Market for home entertainment systems

<https://www.marketwatch.com/press-release/home-theatre-market-demand-gross-profit-opportunities-future-estimations-competitive-landscape-business-revenue-forecast-and-statistics-2018-06-06>

[5] Wiki article on porter's five forces

[https://en.wikipedia.org/wiki/Porter%27s\\_five\\_forces\\_analysis](https://en.wikipedia.org/wiki/Porter%27s_five_forces_analysis)

[6] Sebastian Anthony. "Graphene smart contact lenses could give you thermal infrared and UV vision", March 17 2014.

Internet:

<https://www.extremetech.com/extreme/178593-graphene-smart-contact-lenses-could-give-you-thermal-infrared-and-uv-vision>

[7] Michael Berger. "Smart graphene contact lenses bring wearable electronics to the eye", May 22 2017. Internet: <https://www.nanowerk.com/spotlight/spotid=46780.php>

[8] Michael Berger. "Graphene-based smart contact lens works as self-powered biosensor", June 06 2016. Internet:

<https://www.nanowerk.com/spotlight/spotid=43573.php>

[9] Smart Contact Lenses Market 2018 to 2023 Outlook: <http://heraldkeeper.com/market/smart-contact-lenses-market-2018-2023-outlook-samsung-sony-alcon-google-sensimed-sa-etc-players-counting-7-2-bn-terms-revenue-97232.html>

[10] Zeiss products and offerings in filtered lenses <https://www.zeiss.com/vision-care/int/eye-care-professionals/products/spectacle-lenses/special-lenses/special-filter-lenses/f-60-90-and-f-540-580.html>

[11] Government data in US on Retinitis Pigmentosa [https://nei.nih.gov/health/pigmentosa/pigmentosa\\_facts](https://nei.nih.gov/health/pigmentosa/pigmentosa_facts)