ETM
ENGINEERING & TECHNOLOGY MANAGEMENT

Facebook Wristband

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Executive Summary

The Facebook Wristband is a portable device that translates the brain's motor signals into digital signals that are used to manipulate or control devices cognitively. The device utilizes sensors that detect these intended movements using electromyography (EMG). The motor nerve's electrical activity, as the information travels from the user's brain to their hand(s). The wristband is designed to be used as an alternative or supplement to current input control devices, such as a joystick, keyboard, or mouse.

The initial market for the wristband is the gaming input controllers industry, targeting early innovative gaming enthusiasts and e-sports players. Being the only game controller that is not required to be held in the hand, the value provided to users of this device includes providing the user with greater control, the user becoming one with the gaming system, increased responsiveness, and freedom of movement.

The virtual reality (VR) gaming market is valued at more than $11 billion, and is growing more than 30% annually. The Facebook Reality Labs Oculus VR system holds the largest share of this market, having over 10 million units sold to date. These Oculus system owners are the initial market that will be targeted, where a 3% user adoption of this market for the wristband will result in more than $59 million in gross revenue. Competition for VR game controllers is limited, as these systems are proprietary in nature.

Reaching potential customers will be accomplished through marketing programs that include advertising campaigns to target existing Oculus customers, having a presence at gaming trade shows, and performing digital public relations efforts. The wristband will be distributed through the existing Oculus game system sales channels, and will be initially positioned as an add-on game controller exclusively for the Oculus. Based on the success of this initial targeted product release, additional market segments and product bundling options will be included for future sales growth opportunities.

Elevator Pitch

What if you had a way to translate motor signals from your brain, so that you could move a digital object just by thinking about it? Gamers and those who engage in the virtual world seek out the ability to quickly respond and gain control; the wearable Facebook wristband can more than enhance experiences for users in a completely intuitive way.

When you're one of the big giants in the technology industry, you know what users want - and how to provide it to them.

We are the firsts to innovate a controller that enables users to experience the impact of in-game action via dynamic sensory feedback.

It doesn't stop here; our technology can be paired with the Oculus headset to further the user experience, facilitating freedom in movement.

Company and Product Analysis

Company Analysis

Human beings' inquisitive attitude is unstoppable. It is the hallmark of human beings to make impossible things possible, and this trait has revolutionized the whole world. Facebook Reality Labs (FRL) was founded in 2015, leading the Reality Labs team and the chief technology officer (CTO) is Andrew Bosworth. They have their roots in Oculus and CTRL Labs, and later came under Meta. Facebook Reality Labs have combined virtual reality and augmented reality. This combination seems like a distinct experiment, but it will change the face of the twenty-first century. It will converge the real and the virtual world and make us live in a world of technology that seems impossible. The most essential duty of the researchers is to deal with real-world problems. Facebook Reality Labs took this challenge and worked on the most challenging issues in computer science. Their research focused on pushing back the boundaries that are impacting the lives of millions of people in the area of technology.

The Facebook Reality Labs indeed undertake the limitless potential of human beings. By acknowledging this notion, they are trying to create a technology; they are attempting to break all the barriers that are hindering the passion of human beings. They are developing a world where physical distances do not prove a hurdle between the interaction and the collaboration of human beings. The efforts of Facebook Reality Labs would result in the formation of a world where we all will be able to remain in contact with our friends and colleagues.

The team members of Facebook Reality Labs, such as engineers, researchers, and developers who are working for the merger of virtual and augmented reality, are struggling to reduce the distances and find out how people can keep a connection without any distortion and hence work and play together without any disturbance [1].

To develop a limitless and hurdle-free connection between human beings, Facebook Reality Labs built tools to make an error-free connection. All the designers, engineers, developers, and researchers work together to provide an expansive and inclusive future to all twenty-first-century human beings.

Facebook Reality Labs are struggling to make amendments in technology and working to develop computer visions, audio, graphics, optics, and displays that work through body tracking and hence will enable us to get breakthrough AR glasses and VR headsets. These efforts of reality lab will revolutionize the education sector as well. It will pave the way for researchers to access the virtual library. Furthermore, the inventions of Facebook Reality Labs will allow the upcoming students to understand the scientific diagrams and projects more appropriately than ever before. Apart from all this, their task will prove fruitful for disabled people. It will help them to tackle their disabilities [2].

Product Description

The Facebook Wristband is the first of its kind. The wristband is a product or device that is worn by users, and translates motor signals from the user's brain through the use of sensors that detect user movements. This device aims to permit control of virtual and/or digital objects, and takes the form of a wristband, similar to a smartwatch device, but slightly bigger in size. The device is designed to work with a VR headset (such as the Oculus) that projects computer-created images onto a user's view of the real world, in

order to create an augmented reality (or AR) experience. Similar to smartwatch products, the wristband has a built-in battery, and will need to be charged between uses.

The wristband device uses a technology known as electromyography (or EMG) to translate the complex hand movements of users [3]. EMG measures the electrical activity in muscles when users make movements. The sensors work to translate electrical motor nerve signals that travel through the user's wrists and hands into digital commands that can be used to control the functions of a device.

Key Success Factors and Key Weaknesses

SWOT Analysis (Internal & External)

Strengths	Weaknesses
- Better visual and physical experience - Applicable to everyone (anyone can use AR, including disabled people) - Decreases the gap between the real and virtual world, thus increasing usability and effectiveness in areas of application - Ability to create digital things that are not possible in the real-world - Can be applied to many fields (gaming, medical, engineering, etc).	- Can cause psychological effects - Health issues like eye discomfort, obesity, etc. - Can diminish the user experience of the real world - Human interaction
Opportunities	**Threats**
- Expansion of existing platforms - Increasing integration to other applications	- Data breach - Negative publicity

Areas of Advantage
- Mission statement: "to give people the power to share and make the world more open and connected"
- Acquiring CTRL-labs, a neurotechnology startup
- Facebook-owned VR company, Oculus
- Experience with games and enthusiasts on the Facebook platform
    - Current user base to interview and later convert
- Can promote internal company products and services to existing platform user base at a low-cost

Market Analysis

Market Needs

The VR gaming market is in need of a new way to game. Currently, VR headsets have controllers that are wired and wireless, however, they restrict the full freedom of movement. Gamers also face a delay in

response, and experience hand soreness. These three pain points were reflected in the initial interviews we conducted with gamers. Facebook wristbands not only provide a better VR gaming experience, but it also will help with these three pain points. The wristbands allow faster response times, less friction in the clicks and the cordless feature provides freedom in movement. The wristbands also have customizable neuro triggering, which allows users to customize what each click does, including customized keyboards. The neuro triggering feature allows for faster response and reduction in hand soreness. Lastly, the wristbands provide haptic feedback which adds tension and vibrations while gaming, to create an interactive, immersive environment.

Market Trends & Growth

The VR gaming market is estimated to be valued at approximately $11.56 billion in 2019. It is also estimated that the VR market will grow 30.2% annually [4]. This positive growth will help boost sales for the Facebook wristbands. The Oculus brand dominates the VR headsets and these customers will want to upgrade their controllers for a better VR gaming experience. We also anticipate other branded VR headset gamers to convert over to Oculus to be a part of the new futuristic technology behind the Facebook Wristbands.

Buyer Behavior

The Facebook Wristbands are targeted towards tech-savvy VR gamers who can afford the latest gaming technologies. The customers who are buying the Oculus headsets, or already own the Oculus headsets, are the same customers we are targeting for our product. We will aim to have the wristbands as an add-on purchase to the Oculus headsets.

The voice of the customer reveals that competitive VR gamers need freedom in movement and fast responsiveness in order to perform their best during gameplay. With the new, innovative technology behind the Facebook Wristbands, these pain points voiced by our customers can be resolved. These controllers are superior to anything else on the market and will create a better gaming experience.

Customer Segments

Our customer segments are VR gaming enthusiasts and players who are already in the VR gaming space. These customers already own the Oculus VR headsets and this product would be marketed as an add-on to better their VR gaming experience.

We have identified two more customer segments that we will want to expand to in the future. Design and modeling would be used by architects, designers, and engineers. And the next is for education and training purposes. We see these wristbands used in schools for learning and research.

Competitor Analysis

Based on an article from IndieWire for the Best VR controllers for immersive gaming [5], there are three controllers that have been identified as competitors. The first is the HTC Steam VR Base and Vive Controller bundle for $400. This base station has a camera that tracks your every move, which gives the controller extreme precision. The next product is the PlayStation Move controllers where a set of 2 will cost $133.15. These are exclusive for the PlayStation VR headset. And you will need to purchase a

camera separately. The next product is the Samsung Gear VR motion controller. These are the most affordable, but are exclusive to Samsung products. At only $30, it is the budget controller but is recommended only for testing out VR.

All of these controllers are held in the hand. The Facebook wristband is the only controller that is not required to be held in the hand, which can create a longer, better gaming experience due to less hand soreness, one of the pain points we heard from our interviews. It is also the only controller that uses customizable neuro-triggering to increase responsiveness and reduce the hand/finger friction.

The pattern with VR controllers is that they are exclusive to their own headsets. The features on these controllers can sell a customer to one brand over another if it's promising a better VR experience. We are following this tactic and selling our proprietary technology to work exclusively on our Oculus headsets.

Attributes	FB Wristbands	HTC Vive Base & Controllers	Samsung Gear VR Controllers	Sony Playstation VR Controllers
Price	$199	$399.98	$29.99	$133.15
Exclusivity	Oculus	HTC Vive VR	Samsung VR	Playstation VR
Cons	New technology may have unknown issues	Need to buy base station	Only recommended for testing out VR	Need to buy camera
Held in hand controller	No	Yes	Yes	Yes

Table 1: Competitor Analysis table

Collaborators

The collaborator to this product would be the Oculus VR headset. The wristbands are an add-on product to the VR headset and would replace the existing Oculus controllers. Because the wristbands are going to be sold exclusively to the Oculus VR headsets, we can utilize the existing marketing infrastructure and brand power that Oculus has.
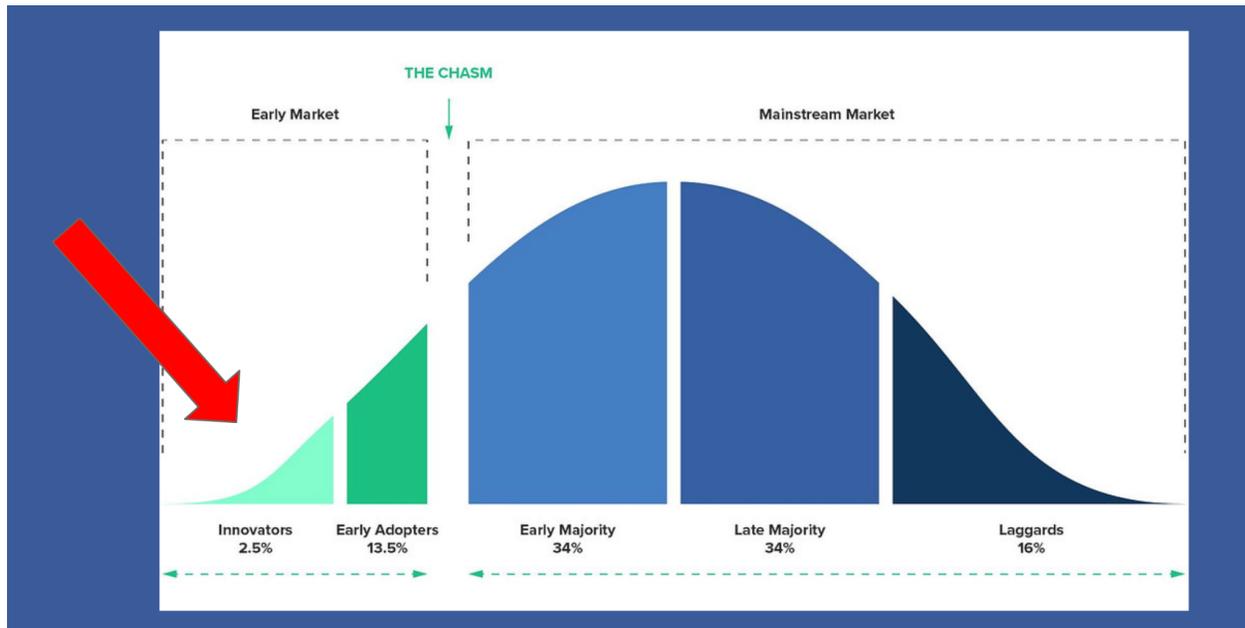
Technology Adoption Lifecycle Curve

Figure 1: Technology Adoption Lifecycle Curve

As seen in Figure 1, the Facebook wristbands are currently in the Innovators section. There are currently no VR controllers like the Facebook wristbands in today's market. All VR controllers currently are held in the hand, need extra equipment such as additional cameras, and some controllers are not wireless. The wristbands are a product that is not widely adopted, and has not yet crossed the chasm. The customers of this product are the people who value innovative technology and want to be the first to try out the new product.

Objectives

Financial

Revenues
There are over 10 Million Facebook Oculus Quest customers today [6], with more than 1 million units being sold each quarter [7]. This group of existing Oculus customers is our current total available market (TAM). Our goal is to acquire 3% of this group (Figure 2), which equates to approximately 300,000 wristband units.
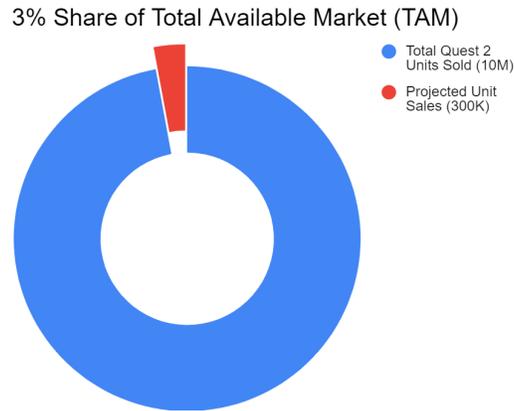
3% Share of Total Available Market (TAM)

Total Quest 2
Units Sold (10M)

Projected Unit
Sales (300K)

Figure 2: Market Share

As has been discussed, the manufacturer's suggested retail price for the wristband will be set at $199, and the production costs for each is $144, that gives us net revenue of $54 per unit (Figure 3).

Wristband MSRP $199

Net Per Unit

Unit Production Cost
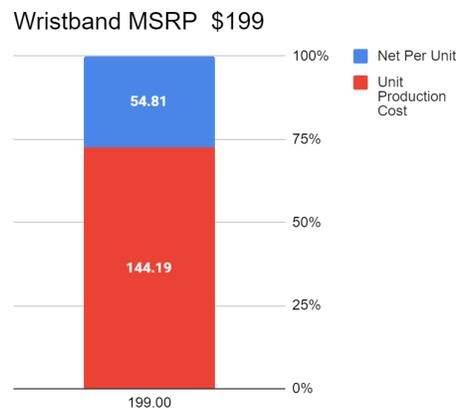
Figure 3: MSRP and Production Cost

Margins

The initial margins will initially be lower than optimal due to production economies of scale. This will change as the adoption of the wristband increases. 300,000 units sold at the $199 price point equates to 59.7 million in gross revenue, and after subtracting our costs, provides a net revenue of 16.4 million, giving a 28% margin (Figure 4). We anticipate that production material costs will decrease by 30-50% through volume purchase pricing from suppliers when producing at scale.
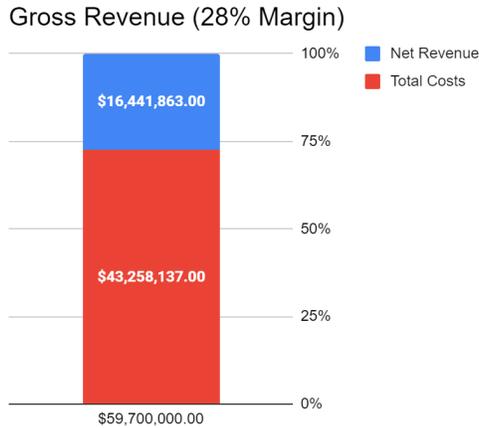
Figure 4: Gross Revenue & Margin

Macroeconomic Forces

The VR industry consists of discretionary products [8] that can be influenced by macroeconomic forces such as recessions, and other forces that affect the disposable income of buyers. Revenues may be reduced if there are negative economic shocks that affect an individual's buying behavior within the economy.

Growth Rate

We anticipate the growth rate of adoption to be 10% over the next 5 years (Figure 5). This is taking into consideration our 3% market adoption rate, the addition of new Oculus customers at 1 million per quarter (where the industry has a market growth rate of over 30%), and increasing awareness of innovators within the space.

Figure 5: Projected Growth Rate & Revenue

Nonfinancial

Customer Satisfaction

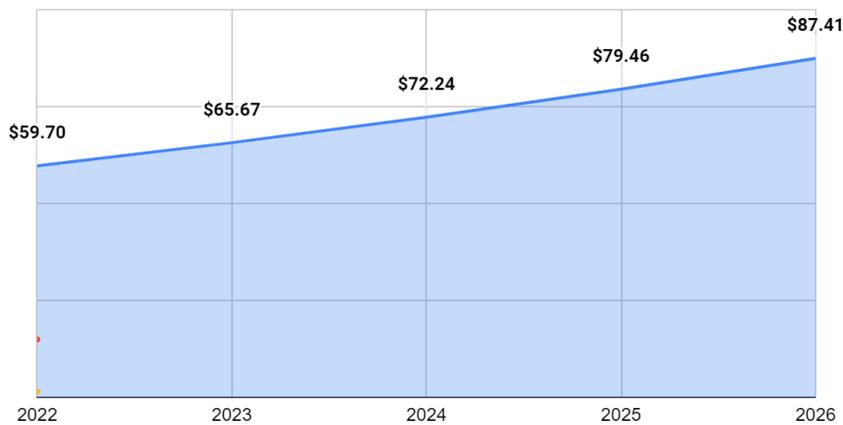For customer satisfaction, we will be providing product warranty, and technical support services. Customer satisfaction surveys will be used at each touchpoint to ensure we are meeting our customers needs and expectations.

Perceived Quality

The perceived quality of the wristband is in its performance, features, reliability, durability, serviceability, like battery charging and cleaning, and its fit and finish, or how it looks and feels.

Loyalty

Loyalty is tightly knitted with customer satisfaction and product quality. The success in these two areas weigh heavily on how loyal our customers will be. Utilizing high-quality components to produce the wristband, combined with a commitment to provide customer-focused warranty and technical support services, will help build a loyal customer base.

Segmentation, Targeting, and Positioning/Value Proposition

Value Propositions

Our value propositions revolve around 3 factors, which can be categorized as control, user experience, and customization. Our product offers various features and user benefits which contribute directly to our value propositions.

Control	Experience	Customization
- User is in control, rather than the controller	- Immersing yourself and becoming one with the gaming system	- Increasing ease of use through individualized, customizable features
- Increased responsiveness	- Force/Haptic feedback	- Customizable neuro-triggering
- Intelligent click	- Freedom in movement	- Customizable keyboards

Table 2: Value Propositions

The Facebook Wristband allows the user to be in control, rather than the controller. The controller increases responsiveness, and includes features such as the intelligent click; which gives users the ability to do many actions in a low friction manner. It also allows users to immerse themselves and become one with the gaming system through the use of force/haptic feedback such as vibrations, or tension/pressure that is added through the wristband to create better gaming and interactive experiences, as well as facilitating users through enabling freedom in movement. In addition, our controller increases the ease of use for users through individualized, customizable technical features such as neuro-triggering (where users can customize keys and movements), and customizable keyboards to fit each user's needs.

Target Market

Entertainment/Gaming Segment: Gaming enthusiasts and players

An important step to consider is market segmentation of the total available market, to our target market to ensure that the new product is placed in the appropriate market. In this case, the most appropriate market does not always necessarily mean the most profitable market, but rather the most suitable market in terms of user or customer needs.

When considering the total available market (TAM) for a product like ours, we can look to areas such where our product can be applied, as well as areas or segmentation levels where usage and application would be most relevant. After careful consideration, it was determined that implementing our product primarily towards the North American market would likely be most profitable for such a high-tech product. While this product can be utilized in both professional and personal settings, our product can be marketed to focus on gaming enthusiasts and game players in the industry. This would fall under an entertainment segment, which fulfills a need for excitement and control using virtual tools.

It would be beneficial to utilize a strategy such as the "influence the influencers" to stimulate word of mouth and generate publicity surrounding the product, especially with the ample amount of social media influencers that are affiliated with the gaming industry. These influencers can assist us through becoming advocates for the product and providing product reviews to boost adoption through viral marketing to influence the masses. Considering the nature of this target audience, utilizing an integrated marketing communications approach and exploiting internet-based marketing tools are most favorable for this product to provide the ability of further scaling and pose greater benefits of cost efficiencies since it can be applied at all levels in the advertising and promotion (A&P) pyramid.

Customer Persona

A customer persona was derived in order to depict the target market for our product:

Sheldon is a 25-year-old male, who lives in Irvine, California. He works as a Software Engineer and makes around $80,000 a year. Working in the technology industry, Sheldon is very tech-savvy, and can be considered as an innovator. He enjoys playing games competitively and looks to gaming as a form of social interaction. He currently utilizes many different smart products and owns an Oculus VR. He frequently streams shows online, enjoys watching product reviews of new technology and gaming products, and frequently engages in social media. Sheldon; like most millennials, prefers to communicate or interact with others online, rather than through phone calls.

His goals, motivations, and values include competing in gaming competitions, connecting with like-minded individuals, gaining a sense of accomplishment from gaming, and improving his overall gaming abilities as well as capabilities.

Some frustrations and fears that Sheldon has are costs to play, download, or acquire games and gaming tools, data privacy and security, and slow responsiveness or internet speeds.

Positioning (Bowling Alley)

- Beachhead:
    - Entertainment/Gaming/Virtual Simulation
- Preceding market segments
    - Design & Modeling
    - Education/training

When considering the positioning for our product, the bowling alley is a concept that presents and describes which segment should be targeted first, second, and third by an organization to prioritize marketing efforts. In order for our team to generate a base for the bowling alley, we need to identify the beachhead we aim to tackle. The beachhead in this case, refers to the first segment. Our team has decided to target the entertainment/gaming sector as our beachhead through using tactics such as integration with Oculus, which is elaborated further in the following sections. Following this, we aim to capture or transition into the other market segments within the next 5 years, by making changes, additions, or adding complementary products/services to the original product. By applying this concept, we strive to overcome the chasm.

Due to the COVID-19 pandemic, many processes and activities have transitioned into a more virtual environment. This product can also pertain to various design & modeling purposes, and educational/training purposes.

Marketing Strategy

Positioning

Market positioning is very critical since it represents the perception that customers have about the product or service. In designing the marketing strategy to use, positioning plays an effective role by posing a statement that defines its position in the minds of the customers relative to other similar products or services. Facebook Wristband competes against Sony Playstation Move, Samsung Motion, HTC & Vive controllers. While Sony Playstation Move ($133) and Samsung Motion ($30) are less expensive compared to the Facebook wristband ($199), the others are expensive with each going at a minimum of $399 like HTC & Vive. Facebook Wristband does not have direct competition but its attachment to Facebook Reality Labs creates some leaning. The product will not compromise on quality but will aim at a lower price to boost sales volume. Its price will be relative with a good quality. This positioning is shown in the figure below.
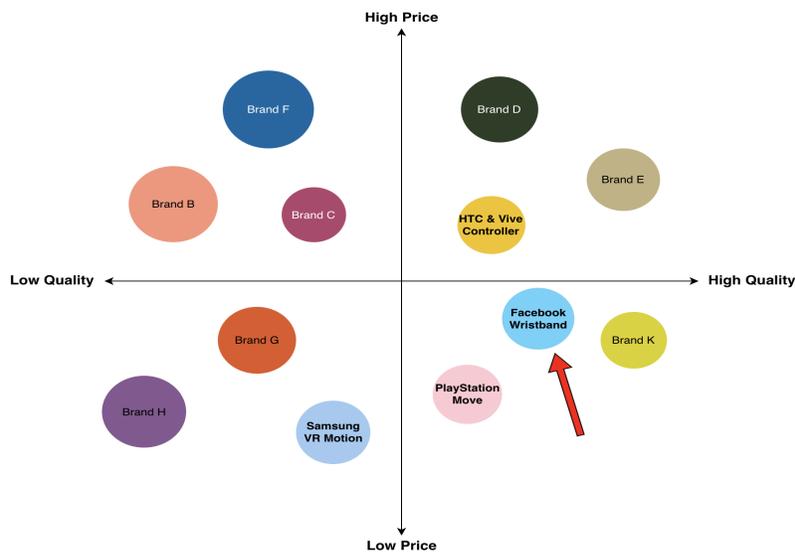
Figure 6: Market Positioning

As seen on the figure the goal for market positioning is to reach that place on mapping Facebook Wristband. The focus is to create differentiated VR technology at a fair price to the customers while offering the ultimate experience. This option might come at a mid-high cost when compared to alternatives in the VR industry. However, pitching unique and customers' satisfaction by opening a new paradigm in gaming would be ideal in the given market. The market position is derived by establishing the uniqueness of the new entrants with respect to the existing players in the market.

Product and/or Service Attributes

The final product that the startup will present to the target customers is a smart wristband that can sense and translate the brain's motor signals into digital information to control devices. A major target for the device is VR where gamers can have better response time hence improving their experience. Oculus.com has a good presence in the VR industry under the Facebook Reality Labs tagline. The Facebook wristband will form part of the product set in the box hence making entries as a new product. This will be a promotion deal for Oculus VR by packing it with the wristband as a product set for Facebook Reality Labs. It can also be packaged as a stand-alone item for customers who will opt for the product set. This stand-alone unit comes as a box package containing the Facebook Wristband, auxiliary connections and a portable charging system.

To create a greater awareness for our product, advertising with a strong brand message that is focused on brand positioning and value (versus promotions and price deals) in the branding mix. An astute advertising campaign that coordinates online and offline campaigns will enable our team to bring greater awareness to the market. It is important for us to consider brand hierarchy, to not only build on brand loyalty, but also provide users with a sense of familiarity when they affiliate the product with Facebook (or Oculus) as a family name and/or umbrella brand.

Oculus.com will also act as the customer service center where all queries about the product, functionality, and customer feedback shall be channeled. A warrant for a period of 24 months subject to terms and conditions is part of the product attribute in order to boost customer confidence in the product. The branding will center on specific customer segmentation in terms of name, packaging, logos, and taglines. This implies that the customer would buy a value or a solution to their problem. In this case, the Facebook wristband will be presented as an invaluable asset with a wide application in virtual reality. This approach will help create a brand identity that the market can relate and associate within the industry.

Distribution

Distribution in the marketing strategy will be a convenient and appropriate place where the customers can obtain the product. It should be at the right place, time and quality while maintaining the inventory and distribution cost at an acceptable level. For a relatively new product, it is important to sell directly to the retailers (or the consumer) in order to create awareness and feedback. The product will aim at exploring the existing distribution chain set by Oculus in places such as Target, Best Buy, and Gamestop. It will also seek the online presence of Oculus to further reach the tech-savvy generation. Another reliable approach is using internet selling which goes hand-in-hand with social media marketing. It will also channel the product using Oculus.com, Facebook marketplace and Facebook partners as it capitalizes on the huge presence to launch and distribute the Facebook wristband. The traditional brick and mortar retailers will also form a central element in the distribution chain.

This distribution channel forms the customer feedback chain where the target buyers can provide suggestions of improvement, compliments and complaints that can be used on future editions of the wristband for a better product experience.

Promotion

Introducing a new product to the market requires extensive outreach for the target market. A promotional mix consists of a specific combination of advertising tools, sales promotion, and public relations used to fulfill its marketing and advertising objectives. Marketers use different strategies to inform and persuade the customers in order to influence their opinion and/or induce a response. The aim is to increase profits when the target market buys more of the promoted VR gadget. For a startup, promotion is very important since it introduces the product or service to the customers by identifying with the specific needs of the group. In this case, the promotional strategy that will be used will be quantity discount. Under this approach, the price of two items will retail at 95% each while the discounted price of three or more items will be 90%. The principal aim will be to increase total sales hence realizing economies of scale. It will also reduce inventory while ensuring the product becomes a household name due to its presence.

The financial strength of Facebook Wristband can be a challenge when employing the marketing strategies used by well-established enterprises in the entertainment industry. The firm will employ options such as free giveaways and create Facebook Reality Labs run booths. It will also use an ad-on option by including the stakeholder logos in its website and outlets. Associating with leading gaming brands could be a major boost in creating recognition for the product.

Price

Setting the price for a new product can be a puzzle for the innovators and management as well. Facebook Wristband is an entirely new technology in the market since no similar or related products are already in circulation. Nevertheless, it is important to create a price distinction based on various aspects involved in developing the products and the market positioning intended. The close competitor to the Facebook Wristband is Sony PlayStation Move with a retailing price of $133. Other closely related controller sets such as HTC Controller ($399) and Samsung Motion ($30). It is important to create a price distinction based on various aspects involved in developing the products and the market positioning intended.

Jesnoewski [9] proposed five-factor price-setting considerations for startups. It included costs, customers, positioning, competitors, and profits. In deciding the retail price for the products, the given criteria will be brought into account. The table below shows the estimated cost of the bill of material (BOM) used in making the product. In deciding the total cost, the intellectual inputs consideration will be tied to the estimated profit margins. It is also important to understand the market dynamics especially from the competitors side. Since the product is premium quality, marketing it as a mid-end price will be ideal. Below, is a rough estimate for raw materials per product without mass production which can reduces the price down to 33%:

Product	Description	Quantity	Unit Price
Passive Components	Resistors, capacitors, inductors	25-50	$1-3
Active Components	Diodes, transistors, integrated circuits	10-20	$1-5
AP9101CAK6	IC-Battery Protection	1	$0.13
MCP73832T	IC-Battery Charger	1	$0.72
DRV2624	IC-Haptic driver	1	$0.61
TPS65631W	IC-LCD & OLED display drivers	1	$0.50
CC2541	IC-MCU with integrated Bluetooth	1	$1.84
MSP430	IC-Microcontrollers	1	$0.68
MAX32664	IC-Biometric Sensor Hub	1	$2.55
LSM303AHTR	IC-Motion Sensors	1	$4.21
FIT0774	Motor Vibration	1	$2.49
AFY240320A0-2.4	LCD Display	1	$26.52
PRT-13851	Lithium-Ion Battery	1	$4.95
PCB	Printed Circuit Board	1	$5

Unknown Components,Software	As it is new product can be hard to know the final component	1	$40
ABS	Plastic Injection Molding	1	$0.50
Packaging	Box to hold the product	1	$0.50
Subtotal			**$99.19**
Labor			$10
Manufacturing			$20
Subtotal			**$30**
Patent	Intellectual rights		~$15
Total			**$144.19**
Scale Cost (33%)			**$74.58**

Table 3: Bill of Materials

As this is a new technology product, it can be a challenge to predict the components that will make it in the final product. The BOM breakdown given helps provide an overview of the initial costs expected including ICs, material, Enclosure, DFM manufacturing, labor cost and logistics. Meeting both the voice of the customer and minimum production cost methodologies, the proposed retail price for the Facebook wristband is $199.00. This is an estimate arrived at from the total cost and a reasonable profit margin.

A critical aspect of pricing is developing a strategy that communicates solution value. It should capture the value of the product to the targeted customer segmentation without putting the brand at risk. Since this is a new product, it is critical to have a price formulation and price execution that resonates with the prevailing economic conditions. While reaching markets outside the United States, it will be important to consider price regulation and the prevailing state of the economy. Facebook Wristband will employ position-based pricing strategy. Under this approach, the firm will seek to create a brand of its own associated with quality VR solutions.

People

This represents anyone who comes into contacts with the product. The impression that they make can destroy or promote the brand of the product. In the case of Facebook wristbands, the employees will be at the forefront of ensuring customer satisfaction. Also, there will be a dedicated after-sale support team to deal with any operational challenges that might be present from the end-user point. Other key parties in the supply chain such as managers, retailers, wholesalers, advertisers and influencers will be part of the marketing mix under people. The company will ensure that they are all familiar with the VR wristband to respond to any issue from external parties that might arise during engagement. Incentives and other methods of motivating the team will be employed to ensure that the pool consists of the best talent available in the market.

Marketing Communications Strategy

Considering that much of our target market is aimed at the entertainment/gaming industry, it would be beneficial for us to utilize a strategy such as "influencing the influencers" to stimulate word of mouth and generate publicity surrounding the product, especially with the ample number of social media influencers that are affiliated with the gaming industry. With that, we identified *Johnathan Nafarrete* (who is one of the few) that could assist us with our marketing communications strategy.

Johnathan Nafarrete is the co-founder and editor-in-chief of VRScout, an immersive media company. A pioneer of mixed reality capture and live drive animation, Jonathan has evolved the way immersive technology is used in content production. Prior to VRScout, Jonathan was the Director of Content Marketing at BLITZ Agency. He has spent the past 8 years in social media marketing and content strategy working with brands to develop ongoing social media programs as well as creative social technology campaigns. Some clients that Johnathan has worked with include Sony Playstation [10].

Jonathan Nafarrete was named by Business Insider as a "Top Instagram User That Advertisers Are Dying To Work With" for 2012 and 2013. Forbes named him among the "Top 30 Social Media Power Influencers" of 2013 [11]. With his large influence over this industry, he could significantly fuel adoption for our product. These influencers can assist us through becoming advocates for the product and providing product reviews to boost adoption through viral marketing to influence the masses. Considering the nature of this target audience, utilizing an integrated marketing communications approach and exploiting internet-based marketing tools are most favorable for this product to provide the ability of further scaling and pose greater benefits of cost efficiencies since it can be applied at all levels in the advertising and promotion (A&P) pyramid. We consider him to be an innovator in the market that can really help us boost product awareness.

Stakeholder Analysis

Several categories of people will be involved or affected by the introduction of Facebook Wristbands into the VR market. The stakeholder analysis identifies these people and the level of influence, involvement, participation and interest they have from the inception of the idea, its development, product launch and determining how best to involve them in the process. Key people in the analysis will be the product designers and developers, employees, Facebook as partners, and the leading players in the distribution chain as listed. Others include financial institutions, competitors, government through regulation and taxation, local communities, gaming licensing boards and public safety apparatus. These stakeholders can be categorized as internal and external, primary or secondary and direct or indirect depending on the criteria at hand.

Stakeholders	Expectations	Name	Communication
Founder	investing in augmented and virtual reality. Creating a positive environment leading to a successful project, final budget and completion time	Mark Zuckerberg	Meeting in person/phone every month to check project status
Manager	Allocate resources, making sure that	Tanya Jonker	Meeting everyday to

|	everyone is on the right track, and work is done as planned by managers and on time		review details and tasks
Employees/ team	Designing and working on building the AR in the Facebook Reality Labs	Staff, engineers, designers	Meeting daily at the Labs
Creditors	Ensure the stability of the product, stability of the money collection	Banks	Meeting monthly as needed to assure ongoing funding
Customers	Ensure the product meet their expectations (quality, price, satisfy their needs)	local communities, gaming licensing boards	Via website to write reviews after reading about or purchasing the product
Competitors	Compares the product features and price	Other company's owners and users	Purchase the product to compare it to theirs
Local government	Decide the amount of taxes, planning permission (budget laber, environment safety, ect)	Inspectors, public safety	Formal proposal before starting the project

Table 4: Stakeholder Analysis

Budgeting and Control
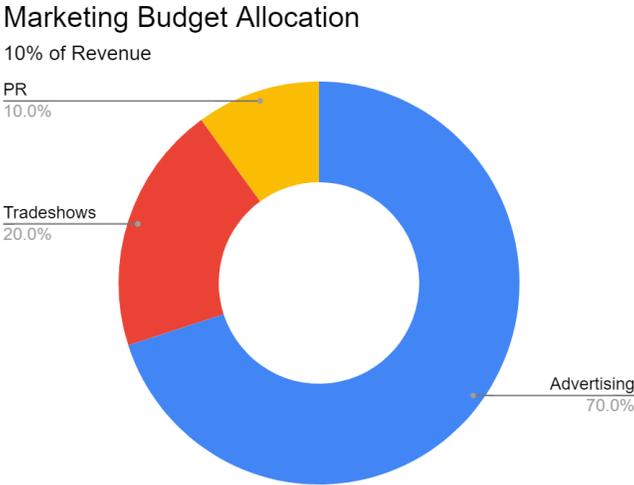
Figure 7: Marketing Budget Allocation

The Advertising budget will be $1.5 million per quarter (10% of expected revenue)

Production costs are $144 per unit, but at scale, we should be able to get the costs down to $75 per unit through reduced material costs at volume. Trade shows will be 20%, or $300K. Shows will include E3, Gamescom, and Global Gaming Expo (G2E). Public relations spending will be 10%, or $150K, focused on digital PR including social media influencers, and press releases

Advertising is set at 70%, or a little over $1 million. This includes direct customer reach through warranty registration contact information, which could be email, direct email, or phone. Social media ads, virtual reality ezines, and digital magazines will also be part of the advertising mix.

We will be using customer feedback from surveys, and actively monitoring social media posts to determine if and where adjustments may be needed in our messaging or product features. We will be monitoring technical support issues to detect any problems that may require product adjustments, termination of product features, or termination of the product itself. We will be monitoring unit sales as a measure of meeting our sales targets to determine if pricing, competition, or other adjustments to our marketing plan is needed. This includes potential termination of the plan if sales numbers are inadequate.

Conclusion

In this project we managed all aspects of marketing the Facebook Wristband product. We utilized technology marketing tools including an elevator pitch, company, product, and market analysis, financial and non-financial objectives. Through our comprehensive analysis and expert use of technology marketing knowledge and tools, this will ensure the successful marketing of the project that was proposed. This course has provided us with the necessary skill sets and competencies to fully interpret the processes and steps that come along with new product launches, and the marketing associated with such products to boost adoption. As a team, we were able to fully recognize the various aspects that need to be considered before deploying such high-tech products that are presented in this paper.

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Appendix

Voice Of Customer (VOC) Pricing (from interviews - willing to spend $):

Option ($)	Total Votes
< 500	0
< 400	0
< 300	2
< 200	6
< 100	4

Min Components	Max Components	Early Costs	Scale Cost (@33%)		Min	Max	Scale
25	50	3.00	1.00		75.00	150.00	50.00
5	10	5.00	1.00		25.00	50.00	10.00
1	1	0.13	0.04		0.13	0.13	0.04
1	1	0.72	0.24		0.72	0.72	0.24
1	1	0.61	0.20		0.61	0.61	0.20
1	1	0.50	0.17		0.50	0.50	0.17
1	1	1.84	0.61		1.84	1.84	0.61
1	1	0.68	0.23		0.68	0.68	0.23
1	1	2.55	0.84		2.55	2.55	0.84
1	1	4.21	1.39		4.21	4.21	1.39
1	1	0.99	0.33		0.99	0.99	0.33
1	1	26.52	8.75		26.52	26.52	8.75
1	1	4.95	1.63		4.95	4.95	1.63
1	1	0.50	0.17		0.50	0.50	0.17
			Cost		144.19	244.19	74.58
		Cost +	**MSRP**		288.39	488.39	149.17
					199.00	**Retail**	
					54.81	**Profit**	
					0.38	**Margin**	

Interviews

During the initial interviews, we focused on gamers and gaming enthusiasts. Open-ended questions were asked to learn more about their pain points, wants, and needs.

Questions used to lead the discussions:
What problems do you have when you're playing video games?
What would help make these issues less of a problem?
Which gaming input devices have you used that may work better than others?
Where do you play games the most?

In summary, this is what we learned:
- Experience sore hands and eyes during play
- Long recharge time or recharging often for gaming equipment
- Slow responsiveness impacts game-play negatively
- Difficulty with the learning curve when adopting a new gaming device
- Desires compatibility across multiple gaming platforms
- Expressed concerns over privacy, security issues, and gathering data/information
- Enjoys game-play interaction with friends and family
- Enjoys the adventure and break from reality that games provide

Research Log

Team Members and Project Topic Selection:
Our team consists of a total of six members, which was formed at the start of the term. As our team brainstormed ideas and topics for our project, we filtered through the potential options based on the feedback received from our professor. Our team essentially decided to demote the topic that was deemed more favorable and that seemed most feasible, or relevant to class content.

Once a topic was agreed upon, sections of the project were segmented to each of the 6 members. Over the course of the term as we worked through various textbook chapters, team members worked on their allocated sections and tasks. The team met frequently on a regular weekly basis after our scheduled class to regroup, and ensure that all members were on the same page with the direction of the project. There was constant communication and support from team members throughout the entire duration of our project to emphasize and prioritize various deliverables that were due to be completed. Members were able to fully contribute to the work given each individual's strengths and abilities. Leadership was split equally among all members of our team.

Developing our presentation & marketing plan
The midterm exam that was given granted us the opportunity to evaluate a separate marketing plan for a product called CreoPop. This marketing plan served as a good example for us to derive the marketing plan for our product. It was helpful to see a well-written marketing plan prior to executing our own marketing plan. The presentation was prioritized over the written marketing plan or paper, due to its earlier deadline. Nonetheless, working simultaneously on both deliverables, and revising our content based on feedback facilitated the team as we pulled together critical points to highlight in the marketing plan.

Group sessions were held where all members contributed to making revisions in the written marketing plan. All opinions and suggestions were considered, with each member assisting other members with their assigned sections. These efforts enabled us to produce high-quality deliverables.