BUSINESS INNOVATION & ENTREPRENEURSHIP:

CROSS-BORDER OPPORTUNITIES IN MEXICO-SONORA

AND

ATHENA VIRTUAL REALITY

By

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Abstract

As a student in the McGuire Center for Entrepreneurship program, I have developed a multitude of skills associated with business innovation and entrepreneurship. My four teammates and I have spent the last year creating a scalable new venture, Athena Virtual Reality (VR). Athena VR enables universities to customize an engaging technology to market their school to prospective students. Users are able to view college campuses, curriculum and career opportunities to improve four-year student graduation rates. Following the collection of validation research, our team developed a business plan that outlines Athena VR's objectives and strategies to achieve the company's overall goals. Our team also participated in several trade shows, including the New Venture Competition in which we prepared a 1-minute, 3-minute and 5-minute pitch for investors. The Honors course in this program primarily focused on cross-border business between the U.S. and Mexico-Sonora. By conducting our own research and listening to several guest speakers, we were able to expand our knowledge about Mexico's economy, culture and relationship with the U.S. I traveled to Mexico-Sonora with my classmates to experience the region's opportunities in business development and analyze how Athena VR can learn from and/or utilize these opportunities in its strategies.

Executive Summary

Athena Virtual Reality

The fast growth and constant evolution of modern technology has transformed the way our education system and job market operate. The shift from traditional methods to digital systems has made it nearly impossible for the younger generations to make an informative decision about their professional future, especially for a future involving STEM education. Shrinking education budgets and a lack of funding for technological resources has made it extremely challenging for high schools' students to make informative decisions about their career passions. This lack of knowledge and experience surrounding potential career opportunities has become a predicament for college universities because about 80% of students in the United States change their major at least once throughout their college career (National Center for Education Statistics). Universities are losing an opportunity cost 1.86% each time a 5^{th} or 6^{th} year senior is taking the seat of an incoming freshman. Students are not only changing their major, but they are also transferring colleges thus paying for extra money on class units.

Our solution to this problem is to provide universities with an engaging technology to help future students feel confident about their future choices in college. Universities will be able to broadcast virtual university tours, classroom simulations of different majors, and more. Our software will visualize college life content and incorporate game-like features to improve overall confidence in junior and senior high school students. Our product will also reduce expendable costs for schools by providing universities with visual ways to perform campus tours. With the implementation of our virtual reality software, we intend to virtualize a variety of university highlights to help students graduate in four years.

Business Opportunities in Mexico-Sonora

I had the opportunity to visit Mexico-Sonora in February 2019 with my honors entrepreneurship class, courtesy of the Tecnológico de Monterrey. The purpose of this trip was to evaluate the skills and resources needed to participate in international and cross-border trade shows, while understanding the opportunities of business development and the creation of long-term value. I presented a trade show like pitch of my new venture development product with my teammate, Lauren Radin, in an attempt to make our first sale while in Hermosillo. We also visited several companies to learn about their global operations, including the Caffenio factory, Maquilas Teta Kawi, and Agropro Precision Agriculture. This trip not only expanded my knowledge about business in a global framework, but it also increased my ethical and cultural sensitivity in an entrepreneurial context.

Our class trip to Mexico-Sonora increased my understanding and knowledge about business in a global framework, especially in an entrepreneurial context. Participating in the "cross-border trade show" and pitching our new venture idea to the team of mentors at the Tecnológico de Monterrey allowed our class to evaluate the skills and resources needed to pitch our ideas globally. The mentors at the Tecnológico de Monterrey also shed a light on both the opportunities and challenges that come with business and entrepreneurship in Mexico-Sonora. The creation of long-term value was evident throughout each of the companies we visited through their commitment to serve the needs of their clients and customers. By evaluating the operations of the Caffenio factory, Maquilas Teta Kawi, and Agropro Precision Agriculture, our class was able to grasp what it takes to develop a global marketing strategy for specific products and services. I feel honored to have accompanied my honors peers on the trip to Mexico-Sonora, and by doing so, we ultimately expanded our knowledge on what it takes to conduct business in foreign countries.

Understanding Mexico's Culture and Economy

There are many entrepreneurial opportunities in Mexico-Sonora. Mexico's economy has remained stable since the 2008 recession, making the country a place filled with a surplus of economic investment potential (Barbachano International 2018). Although Mexico, especially Mexico-Sonora, has many opportunities for investors, it also has many challenges. Cultural differences and uncertainties have provided obstacles for American or foreign investors to establish businesses in the country. If a business partner from the U.S. would like to consider investment opportunities in Mexico, he/she should consider the following facts about the country.

The Relationship Between the U.S. and Mexico

Justin Dutram, the program coordinator for the University of Arizona's Office of Global Initiatives, shared beneficial information with our class about conducting international business with our neighboring country, Mexico. Dutram underlined the importance of establishing a close relationship with the United States' third largest business partner. While there are many negative stereotypes and a language barrier between the two countries, there is much potential for success in cross-border business.

The Legal Environment of Cross-Border Business

Virginia Staab, Consul General for the U.S. Consulate in Nogales, Mexico, spoke to our class about her life and duties as a diplomat. Staab began working as a diplomat under President Bush and now serves as the maximum authority of the U.S. in Mexico. Her consulate district is 440 miles of the 1200-mile-long U.S.-Mexican border. Mexico has always been an incredibly important country to the U.S., and Staab spends her professional life looking at development and trade, security, working on exchange programs, etc. She tries to build people to people relationships between the U.S. and Mexico by working with culture, economics, social programs, business, sports programs, and more.

Traveling to Mexico

Laura Provencher, the Associate Director of Global Residency at the University of Arizona, spoke to our class about safety when traveling to Mexico. Laura briefly outlined her main objectives: sharing travel safety best practices, identifying and mitigating risks, preparing to address problems, and registering your trip. She explained how she learns something new every time she speaks to a group of people about traveling, so it was our job to give her tips and stories about our own abroad experiences. When you travel internationally, everything is not always going to go as it was planned. Laura helped our class prepare for our future travels with her presentation, including details on safety concerns, research, planning ahead, smart lodging, frequent travelers, medical considerations, and registration.

Cross-Border Business Innovation & Entrepreneurship

Business Opportunities in Mexico-Sonora

Introduction

I had the opportunity to visit Mexico-Sonora this past month with my honors entrepreneurship class, courtesy of the Tecnológico de Monterrey. The purpose of this trip was to evaluate the skills and resources needed to participate in international and cross-border trade shows, while understanding the opportunities of business development and the creation of long-term value. I presented a trade show like pitch of my new venture development product with my teammate, Lauren Radin, in an attempt to make our first sale while in Hermosillo. We also visited several companies to learn about their global operations, including the Caffenio factory, Maquilas Teta Kawi, and Agropro Precision Agriculture. This trip not only expanded my knowledge about business in a global framework, but it also increased my ethical and cultural sensitivity in an entrepreneurial context.

The Tecnológico de Monterrey

According to *The Princeton Review* and *Entrepreneu*r, the Tecnológico de Monterrey has the 14th best undergraduate entrepreneurship program in the world. These rankings are determined through the examination of several topics, including: the percentage of faculty, students, and alumni who have been successful as entrepreneurs, the number and scope of mentoring programs, scholarships for entrepreneurship studies, and the level of institutional support for business plan competitions (Murillo 2017).

Before several of the NVD honors students pitched their new venture projects, a panel of eight mentors at the Tecnológico de Monterrey answered several of our questions regarding business and entrepreneurship in Mexico-Sonora. The speakers shed a light on both the challenges and opportunities that come with being an entrepreneur in Mexico, specifically in Hermosillo and the Mexico-Sonora region. Mexico's business culture is much different than culture in the United States – Americans are known for being independent in their future endeavors, whereas Mexicans are more likely to follow in the same path as their parents and/or family. Most young-adults in Mexico face the challenge of choosing between pursuing their own passions or taking over the family business. Because family is an extremely important aspect of Mexico's culture, entrepreneurs are considered rare. However, entrepreneurship has increased and become more accepted in Mexico's culture throughout recent years.

Considering entrepreneurship has been an oddity throughout Mexico's history, entrepreneurs face many obstacles, including complicated regulations and legal battles that require a high cost in both time and money. A small number of large companies in Mexico dominate the market, thus having a great deal of power over startup companies. Entrepreneurs in Mexico-Sonora must take many legal steps with the Mexican government to develop forms of intellectual property. In turn, entrepreneurs face intense competition with the large corporations that maintain a substantial percentage of the market share in each industry.

In addition to strict regulations and heavy competition, cash flows are extremely hard to obtain for entrepreneurs in Mexico-Sonora. Unlike the U.S., entrepreneurs in Mexico do not have access to venture capitalists or "Angel Investors" who provide a great deal of help to new businesspeople. However, entrepreneurs in Mexico do not need as much cash for a startup as entrepreneurs in the U.S. require. The mentors at the Tecnológico de Monterrey emphasized this difference between the business world in Mexico and the U.S.

Another obstacle that entrepreneurs face in Mexico is the lack of employees willing to work for a startup company. The uncertainty and instability that comes with joining a startup company turns potential workers away from the opportunity to work for a new venture. Although the labor force is large in the Mexico-Sonora region, entrepreneurs struggle to find employees that are willing to take on the risk of the unknown. When making a decision about job opportunities, the stability and support of working for a family business often outweighs the potential success that an employee can achieve by working for a startup company.

Despite obstacles in the business world, the Tecnológico de Monterrey has provided Mexican students with the knowledge and resources necessary to begin developing a new venture. Many entrepreneurs in Mexico-Sonora are hopping on the technological innovation bandwagon – with the increasing use of technology in our world, there is much potential for entrepreneurs to identify a problem and create a solution using technology. The mentors discussed several examples of technological entrepreneurs, such as students creating a service for professionals (farmers, businesspeople, etc.) using drones, virtual reality, and more. The Mexican government has been increasingly focusing on development in mining, agriculture, renewable energy, and technology. The focus on these industries have proven to provide entrepreneurs with a great deal of potential in developing new products to support the growth of the country.

Although entrepreneurs in Mexico-Sonora face many challenges, there are many strengths that come with operating a new venture in the region. Hermosillo is considered one of the smaller cities in the country, and the mentors claimed it is an "everyone knows everyone" type of community. If an entrepreneur in the community performs a good deed, it is likely that positive word-of-mouth will spread among members in the community, so people will become aware of that good deed. That being said, this type of "snowball" effect also occurs in funding. Once one person invests in a company or idea, this will influence many others to invest in the opportunity as well. People are extremely supportive in Mexico-Sonora's culture, and this support has been extremely beneficial to entrepreneurs in the area. One student asked the panel of mentors how entrepreneurs gain funds for their business endeavors – one of the ways entrepreneurs achieve funds is through family businesses. Most companies in Mexico-Sonora are second generation businesses, and they are currently in the process of handing many responsibilities over to the younger generation. This switch of leadership within family businesses has encouraged businesspeople to invest in startup companies that will ultimately help the family business prosper in the future.

After the panel of mentors finished answering our questions, my teammate, Lauren Radin, and I had the privilege to pitch our new venture development product to the mentors at the university. Our new venture, Athena VR, helps students facilitate the taxing process of determining the right career path before entering college through the use of experiential learning virtual reality games in different professions. Students are spending excess time and money going into college not knowing what major or career path interests them. According to the National Center for Education Statistics, about 80% of students in the U.S. end up changing their major at least once. On average, college students change their major at least three times over the course of their college career. Our solution to this problem is to implement Athena VR's software into high school curriculum so that students are able to start experiencing different career paths, find what interests them, and ultimately work towards entering a career they are confident about. Lauren and I received a positive response from the mentors about our new venture. Several mentors expressed excitement about our idea, claiming that the supportive nature of citizens in the Mexico-Sonora region would encourage us as entrepreneurs. Students in Mexico-Sonora equally struggle with the issue of professional uncertainty considering that the fear and unpredictability of a person's future is a worldwide issue. Products and services similar to Athena VR have not yet been established in Mexico, so the mentors displayed interest in our new venture.

The Caffenio Factory

After our event at the Tecnológico de Monterrey, the NVD students ventured off to the Caffenio factory in Hermosillo. Caffenio is a leading coffee company in the Mexico-Sonora region that is "dedicated to the development of innovative products and concepts around the coffee culture" (Caffenio 2018). Our class toured the factory and quickly discovered how devoted Caffenio is to serve the needs of its customers. It was exciting to learn about the stages of growth a coffee bean must go through in order to brew a delicious cup of coffee. Caffenio is able to operate successfully through its use of technology and innovation in the factory. The massive factory employs many workers who spend their days developing a product that will satisfy the needs of Caffenio's consumers.

Caffenio sells its products through many business segments, including consumption centers, convenience stores (OXXO), coffee shops, self-service and wholesalers, and specialty coffee bars. Caffenio's partnership with OXXO, a convenience store with the largest number of establishments in latin America, has proven to be extremely successful for the inventive company. Caffenio delivers its products to tens of thousands of OXXO stores daily, thus regularly selling its products to thousands of people outside of the company's individual coffee shop locations. Although working with a company as large as OXXO can prove to be challenging for many businesses, Caffenio has mastered the art of production and distribution to convenience store locations. This partnership has allowed Caffenio to disperse its products at an enormous scale, therefore increasing its revenue and profits altogether.

The "Innnovation Lab" of the Caffenio factory was an extremely exciting aspect of the business tour. This lab is where Caffenio leaders analyze the market and, in turn, develop and test new product ideas. Equipped with several different coffee machines, Caffenio's innovation lab is where the long-term value for the company is created.

Throughout the tour of the Caffenio factory, I quickly learned how much commitment, time, money and labor is required to succeed as a startup in Mexico-Sonora. Although Caffenio has been operating its business for over 75 years, I recognize the enormous effort it must have taken the founders of Caffenio to attain the prosperity that the company has today.

Maquilas Teta Kawi

The next business our class had the honor to visit in the Mexico-Sonora region was the Maquilas Teta Kawi industrial park. Maquilas Teta Kawi belongs to The Offshore Group, a provider of vertically structured manufacturing support services (Offshore International Inc.). Many important aspects of cross-border business were revealed during our tour of Maquilas Teta Kawi. The company provides various services to foreign companies that wish to manufacture their products in Mexico for their subsequent export to the United States and Canada (Offshore International Inc.). Maquilas Teta Kawi operates so more companies are able to establish a presence in Mexico. The speaker at Maquilas Teta Kawi was proud to say that the company provides over 17,000 jobs to citizens in the Mexico-Sonora region – they have 29,000 employees and 76 clients, including big-name brands such as Rolls-Royce and GE.

Maquilas Teta Kawi's clients are able to send raw materials to the industrial park by exporting these materials to Tucson where trucks pick it up and transfers the materials to Mexico. After handling the manufacturing operations, Maquilas Teta Kawi then sends the client's finished products back to Tucson where they can be transferred to any location in the United States.

Maquilas Teta Kawi provides many benefits for its thousands of employees. The company takes care of payroll, accounting, and conducting internal audits. Maquilas Teta Kawi has health clinics onsite for its employees with top-of-the-line doctors and nurse practitioners. Some locations even have a child care facility so its employees do not have to send their children to day care somewhere else. The company sends buses throughout the Mexico-Sonora region to pick up over 12,000 employees daily. Safety is ensured through 24/7 park surveillance around the industrial park.

Although our visit to Maquilas Teta Kawi was brief, we quickly discovered how the company has gained so much international success. By providing both its clients and employees with the best benefits a company can offer, Maquilas Teta Kawi's value proposition lies in its ability to ease the process of conducting cross-border business.

Agropo Precision Agriculture

Finally, the last company our class had the pleasure to visit was Agropo Precision Agriculture. According to the company's website, Agropo offers analytical tools for farmers, agriculture service providers, and drone operators to make decisions, reduce cost and maximize production. Agropo monitors health, plant count, and field valuation through an "intuitive analysis platform", turning aerial images into valuable information for farmers across the Mexico-Sonora region (Agropo 2019).

The speakers at Agropo Precision Agriculture showed our class a demo of how its products work for its clients. The company offers a subscription-based revenue model, offering its clients with a detailed chart of its prices online. Prices are based on the level of detail Agropo offers through basic crop assessment, professional reports, specialized reports, layer management, and more. As a startup company in the Mexico-Sonora region, the speakers at Agropo explained how risky it was for the founders to leave their stable jobs and start the new venture. However, based on the assessment of their products and prices, it is clear that the founders of Agropo are devoted to helping its clients maximize their farming success.

Entrepreneur Dannia Peredia León spoke to our class about her experience in foreign trade and customs, thus being a master in conducting cross-border business for a new venture. By utilizing several forms of modern technology, including drones, Agropo has able to establish itself as a leading company in the AgTech movement in Latin America.

As an entrepreneur student, Agropo Precision Agriculture was one of the best companies we could have visited on our visit to Mexico-Sonora. To ensure clients get the most out of their investment with the company, the founders of Agropo developed the specialized software in-house and offer personalized guidance that are customized to each of their client's needs.

Conclusion

Our class trip to Mexico-Sonora increased my understanding and knowledge about business in a global framework, especially in an entrepreneurial context. Participating in the "cross-border trade show" and pitching our new venture idea to the team of mentors at the Tecnológico de Monterrey allowed our class to evaluate the skills and resources needed to pitch our ideas globally. The mentors at the Tecnológico de Monterrey also shed a light on both the opportunities and challenges that come with business and entrepreneurship in Mexico-Sonora. The creation of long-term value was evident throughout each of the companies we visited through their commitment to serve the needs of their clients and customers. By evaluating the operations of the Caffenio factory, Maquilas Teta Kawi, and Agropro Precision Agriculture, our class was able to grasp what it takes to develop a global marketing strategy for specific products and services. I feel honored to have accompanied my honors peers on the trip to Mexico-Sonora, and by doing so, we ultimately expanded our knowledge on what it takes to conduct business in foreign countries.

Understanding Mexico's Culture and Economy

There are many entrepreneurial opportunities in Mexico-Sonora. Mexico's economy has remained stable since the 2008 recession, making the country a place filled with a surplus of economic investment potential (Barbachano International 2018). Although Mexico, especially Mexico-Sonora, has many opportunities for investors, it also has many challenges. Cultural differences and uncertainties have provided obstacles for American or foreign investors to establish businesses in the country. If a business partner from the U.S. would like to consider investment opportunities in Mexico, he/she should consider the following facts about the country.

Mexico's Emerging Market

Mexico's current status remains as a country with an emerging market, meaning companies that decide to start in Mexico have plenty of first mover advantages (Barbachano International 2018). First mover advantages include gaining a competitive advantage through the control of resources and the market early on. By becoming one of the first movers in a stable economy, companies are able to build brand equity and several partnerships on its path to becoming one of the leading names in the industry. An emerging market also provides new companies with access to new capital which, in turn, can lead to expansion within the country (Barbachano International 2018). Starting a business in a country with new capital not only helps income and the business grow, but it helps the country as a whole. Because Mexico's banks are "stable and diversified" following the big recession, investors have the opportunity to expand their business into this country with little economic risk (Barbachano International 2018).

Cross-Border Business

Opportunities for businesses seeking to expand into Mexico spread further than just new capital and a stable market. Because Mexico shares such a large border with the United States, the two countries share a familiar cultural relationship with each other. Most Mexican consumers are very knowledgeable about American products and brands. That being said, if an American investor was seeking to expand their business into Mexico-Sonora, they will be pleased to find out that the Mexican culture is very willing to accept American manufacturing (Barbachano International 2018). Unlike doing business with other countries, business owners in the United States are able to easily produce and sell products to Mexican consumers as a result of the closeness of the two countries.

Mexico-Sonora shares a 368-mile border with Arizona, providing business-owners in the United States with an opportunity to access a skilled work force, world class infrastructure, several high-level research centers, national leadership in economic sectors, and a link to a very successful business environment (Cushman & Wakefield 2011). In addition to this access, American business-owners are provided with many incentives to invest in Mexico-Sonora. The ProSoft program in the state offers cash grants to investors in IT technology (Wade 2017).

According to an article written by James Paine, many entrepreneurs are abandoning the dreamland of Silicon Valley and turning to Mexico due to less competition and a lower cost of living (Paine 2018). Mexico has thrived as a result of its involvement in the high-tech manufacturing industry. The technology industry in Mexico is being driven by supply and demand with over 100,000 high-quality engineering and manufacturing jobs in Guadalajara (Paine 2018).

Although the tech-scene in Mexico seems to be prospering, entrepreneurs must consider the lack of competition within certain industries the country. One example of this problem is Carlos Slim, a Mexican "telecom tycoon" who owns several companies that control 70% of mobile phones in Mexico (Lustig 2017). If an American investor was seeking to bring business to Mexico, they should conduct further research about the marketplace, especially mobile phone and television industries, beforehand.

As a result of strong links with the United States, Mexico's macroeconomic variables parallel that of its neighbor (Zervos 2016). If the economy in the United States is prospering, Mexico's economy is likely to be prosperous as well. This correspondence between the two countries provides a great basis for establishing and maintaining successful business deals and partnerships.

The North American Free Trade Agreement (NAFTA) has provided American business owners with a great opportunity – it is not required to be a Mexican resident to open a business in the country (Lustig 2017). Although the process to obtain a working visa is longer than other Latin American countries, a one-month time period can be worth it for a business to operate in a country with 44 free trade agreements (Lustig

2017). The region of Mexico-Sonora specifically provides many opportunities for companies in the automotive, aerospace, and electronic industries (Wade 2017). Mexico-Sonora has been rapidly expanding into the Information Technology industry for the last decade, providing several opportunities for American technological entrepreneurs.

However, there are still many challenges when considering investment opportunities in Mexico. There is a perception of a great amount of violence in the country linked with crime and corruption in the government and local environment (Lustig 2017). The news stories about Mexico's organized crime, however, do not portray a "realistic description of what life is like for the country's many tech founders and entrepreneurs" (Paine 2018). Business-owners must be cautious and keep this fact in mind when considering investing in Mexico. The recent U.S. election has also caused conflict with Mexico due to President Trump's negative outlook on Mexico's involvement with the 50 states. Trump recently called NAFTA "one of the worst trade deals in history" and even announced a potential termination of the agreement between the three countries, including Canada (Lustig 2017). If the United States and Mexico continue down this negative path of government and communication, cross-border business-owners must be wary of the consequences.

Cultural Differences

Some major aspects of cross-border business culture revolve around the cultural differences between Mexico and the United States. Whether or not someone is conducting business in Mexico, personal space is much different between Americans and Mexicans. Citizens of Mexico are much more open to physical contact than Americans, meaning handshakes, hugs, and even width of standing are longer and closer than the average American is used to. If Americans are not willing to accept this standard, they could be seen as cold or rude (Burns 2016).

Another difference between Mexican and American culture is the standard of time. As Americans are typically on-time and speedy when conducting business, Mexicans are quite the opposite. Many articles have provided information about Mexicans typically being late to business meetings. They also take the time to get to know the person they are doing business with to establish a sense of trust and honestly. Doing business in Mexico is seen as a much more personal encounter than it is in the United States. That being said, citizens of Mexico are interested in doing business with people, not with the company. The "business" aspect of a business meeting in Mexico is not the most important part – the personal encounter between business partners is considered much more meaningful than the actual business being organized (Burns 2016).

It is extremely important for Americans to set specific deadlines and check in frequently when conducting business in Mexico. In the United States, accountability is assumed (Yucatan Times 2014). However, in Mexico, responsibility and accountability must be definite. The process of communication is quite different between the two cultures. If an American is told to complete an assignment by a certain date, they will do so – no questions asked. Mexicans, on the other hand, must be reminded and checked on frequently to ensure that the assignment is being completed by the appropriate time and date (Yucatan Times 2017). This issue revolving around communication and assumptions in cross-border business culture is one of the most important concerns for any investor or entrepreneur. To ensure business is getting done quickly and efficiently, an investor must consistently check on his/her Mexican business partners and employees to provide support for them. Business meetings should be confirmed several times, especially on the day of (Burns 2016).

Directness is another crucial difference between the two cultures. While many countries share this dissimilarity with the United States, Mexicans are well-known to not be as direct as Americans when it comes to answers or decisions. Being indirect is considered to be polite in Mexico. To avoid offending a business partner, Mexicans will often use the term “I will get back to you,” even when they are not interested in working together (Burns 2016). It is important for Americans to learn patience when conducting business in Mexico to display courtesy and respect.

Family and religion are extremely significant in Mexico’s culture. Seniority and familial hierarchy are still honored in Mexico, so it is imperative for Americans to understand this before conducting business in the country. Many companies in Mexico will have priests bless “new corporate premises” due to the country’s status of being widely catholic (Burns 2016). In regard to family and hierarchy, Americans should shake the hand of the oldest member of the group first to display respect. Although “machisimo” is a fading stereotype in Mexico, many companies in the country still recognize men as the ultimate decision makers in the household and in business (Burns 2016). It would be helpful for an entrepreneur or investor to do some familial research about specific companies in Mexico before conducting business with them.

According to a document created by the Secretaría de Economía in Sonora, Sonora offers investors “an excellent location, a high available workforce, first-class infrastructure, and provides efficient relationships between high-level research centers and the dynamic business environment supported by the state” (National Research System 2018). If an American investor is able to honor the cross-border cultural differences, Sonora is a great location to find success while establishing a new business. Sonora logged nearly 1.5 million workers in 2017 (National Research System 2018). Most of these workers have jobs in the manufacturing industry – an industry that provides much opportunity for American investors due to the familiarity of American products in Mexico. With cheap labor and quality workers, an American entrepreneur is provided with the chance to thrive in Sonora’s society.

Conclusion

Mexico-Sonora provides many great investment opportunities for American entrepreneurs. If I were to give advice to a business partner from the U.S., I would suggest conducting and studying research on the major aspects of the cross-border business culture beforehand. The manufacturing and tech industry in Mexico-Sonora is thriving as Mexico is an emerging market with a stable economy. Although there are many differences between the two cultures, American and Mexican business leaders are able to work well together when these differences are respected and honored. Time, accountability, directness, family, and religion are just a few of the values in the cross-border business culture that are important to consider when bringing business to Mexico. Entrepreneurs must consider both the opportunities and challenges of managing a business in Mexico versus the United States.

The Relationship Between the U.S. and Mexico

Justin Dutram, the program coordinator for the University of Arizona's Office of Global Initiatives, shared beneficial information with our class about conducting international business with our neighboring country, Mexico. Dutram underlined the importance of establishing a close relationship with the United States' third largest business partner. While there are many negative stereotypes and a language barrier between the two countries, there is much potential for success in cross-border business.

Language Barrier

Dutram expanded on the language barrier between Mexico and the United States. He stressed how learning and attempting to speak Spanish when conducting business in Mexico can demonstrate respect and politeness. Mexicans are very accepting of those who attempt to speak the same language in their country. I can personally relate to this aspect of cross-border business because I spent a semester studying abroad in Barcelona, Spain. Although I had a difficult time speaking the language, Spaniards were extremely appreciative of the effort I put in when communicating with their language. It is refreshing to realize that simply attempting to speak a country's language when engaging in cross-border business can exhibit honor.

University Connections

Because Mexico is so close to our country, many American universities are beginning to establish a connection with universities across the Mexican border. Dutram has worked with the University of Arizona to partner with colleagues in Mexico to benefit both parties in the long run. Mexico and the United States have worked together to increase productivity in both countries, advancing the business sector in many areas, including technology, innovation and manufacturing. Not only have students at the University of Arizona taken steps to establish business connections in Mexico, but many other universities in the United States have also taken steps to create partnerships within our countries.

Communication Methods

Type of communication is very important when engaging in cross-border business. Although many Americans prefer to use email, Dutram explained how Mexicans are more likely to use messaging apps, such as Whatsapp. If you desire for your cross-border business to be successful, adapting to the difference in communication strategies is key.

Industry Opportunities

Aerospace, manufacturing, creation of produce, and other industries have created a heap of jobs and capital for both Mexican and American civilians throughout history. On our class' future trip to San Carloas, Dutram advised us to pay close attention to Guyamas. Many Americans travel and move to Mexico to work in this aerospace program. On the other hand, the regions of Sonora and Nogales are top locations for imports. Fresh fruits and vegetables are produced in this region and exported to the United States.

Negative Stereotypes

Dutram expanded on the importance of not succumbing to stereotypes regarding Mexico and its civilians. Although many Americans have negative stereotypes about business in Mexico, the country is excelling in many industries, including technology and its use of natural resources. Dutram has strengthened partnerships between the two countries for several years – he ensured our class that his connection with the educational industry in Mexico have proven to disprove the negative stereotypes about the Mexican business culture.

Conclusion

Because Mexico is so close to the United States, there is much potential for success in cross-border business. Throughout his career and presentation, Dutram has evaluated many cultural similarities and differences between the United States and Mexico to increase cross-border business success. If you are looking to expand your business into Mexico, it is important to adapt to communication differences and attempt to speak other languages. Focusing on key industries in Mexico, such as technology and manufacturing, can also benefit your business greatly. Anyone engaging in cross-border business should avoid succumbing to negative stereotypes and, instead, be open to accepting cultural differences.

The Legal Environment of Cross-Border Business

Virginia Staab, Consul General for the U.S. Consulate in Nogales, Mexico, spoke to our class about her life and duties as a diplomat. Staab began working as a diplomat under President Bush and now serves as the maximum authority of the U.S. in Mexico. Her consulate district is 440 miles of the 1200-mile-long U.S.-Mexican border. Mexico has always been an incredibly important country to the U.S., and Staab spends her professional life looking at development and trade, security, working on exchange programs, etc. She tries to build people to people relationships between the U.S. and Mexico by working with culture, economics, social programs, business, sports programs, and more.

Staab's History with the Department of State

Staab attended Stanford Law School and worked a lawyer for an international corporate law firm in San Francisco. While traveling around the Philippines in 2001, Staab watched the terrorist attack on the twin towers from her television. It took her three days to get out of the country – after walking across the border in Canada to get back into the states, Staab realized she wanted to do something to help our country build bridges instead of tearing them down with other countries. She remembers thinking, "We can have differences in our world, but we need to respect each other's opinions." After arriving back safely in the U.S., Staab took a foreign service exam and started her political career working as an ambassador staff aid in Columbia. For a while, Staab was in charge of finding people who were kidnapped and getting them back home safely. She went from Columbia to London where she interviewed terrorists, and later worked in Washington D.C. where she was the spokesperson for western hemisphere affairs.

Staab also worked in Haiti, Portugal, and Guatemala before working in her current posting in northern Mexico.

Goals and Initiatives

As Staab continued to dissect the responsibilities of her career, she commented, “no two countries are the same – we might have commonalities, but you need to understand the culture, the language, and where things come from to promote your goals and initiatives.” Staab’s three main initiatives are to protect American citizens, protect American interests, and encourage effective communication between the two countries. 50 Americans live in her consulate full time – if they are operating a business in Mexico, she makes sure they are treated fairly under the law. She looks at current problems Mexico is facing, such as the housing crisis in Puerto Peñasco. Many houses are being taken away from Americans because Americans are no longer allowed to own property under their name close to any body of water in Mexico. Mexican trusts have expired, and they are trying to protect their economy by taking control over property.

Trade & Border Checkpoints

Staab’s goal is to understand the balance that is improving the security between two countries and streamlining trade while doing so. The amount of trade that goes across our border with Mexico is phenomenal. Billions of dollars’ worth of goods cross her part of the border alone – it is a perfect spot for commerce to come across the border near Nogales, including material goods, cattle, agricultural goods, and more. The states are competing for that commerce to come across the border in their territory. For example, Texas is trying to encourage Mexican commerce to increase trade across their state lines. Staab outlines the importance of understanding the foundation laws between trade and understanding the ethical considerations of doing business in another country. She explained how some of the surprises in her job have come from the process of how products get to the ports of entry at the border. In her area of responsibility, or AOR, there is a checkpoint that is known to be looking at the national security of Mexico, but it is really used to help the war on drugs. The checkpoint was strategically placed to check people travelling north bound rather than south to monitor contraband. Contraband includes, but is not limited to illegal immigrants, drugs, weapons, and money. $9.4B of commerce went across this particular point of entry last year alone. Part of the reason that this checkpoint went to this particular AOR is because of political reasons – if there are delays in the commerce route that goes into Arizona, then people down in Mexico are going to choose a different, faster route. There is an area that is just 13KM from the border owned by a powerful Mexican senator. A “concessionaire” collects money in exchange for passage through this area. The “Corridor of Fiscal” is working to try and eliminate this process so the concessionaire does not receive payment for all of the goods and trucks going across the border. The issue with the concessionaire is that he does not reinvest this money to the port of entry – Staab is trying to streamline this process so there is only one inspection at the border.

New Technology

Staab is currently trying to implement new technologies to decrease the limitations of crossing the border. The first limitation is the amount of personnel available – the U.S. never has enough people to get the trucks and cars through the border quickly. Staab wants to use new technology that would eliminate the requirement for trucks and cars to stop when crossing the border. Right now, the driver must step outside of the vehicle in order for border patrol to inspect paperwork, cargo, etc. If the inspection does not go smoothly, drivers must pass through a secondary inspection where trucks are entirely unloaded and reloaded over again. This process can take over an hour for each individual truck – if you multiply this time by the tens of thousands of trucks that go through this port of a weekly basis, there is a massive hold up. The new inspection technology would work similar to the way X-rays work. For security reasons, implementing this new technology would be much better for both border patrol and people crossing the border. The amount of contraband would be significantly decreased with this new technology as well.

Business in the North & South

Staab is a huge advocate for Americans bringing business to Mexico. She is actively trying to build the capacity of entrepreneurs because it greatly benefits the economy of Mexico. She believes that there is so much more that unites us across the border, and part of the challenge is getting people to cast out negative stereotypes and understand how valuable cross-border business is. Trump has created tax benefits for the border region which has been largely neglected over time. Trump is also looking to raise minimum wage for workers at the assembly lines, production facilities, and other businesses that are near the northern border. This provides incentives for investment in the border region. Staab explained how this has created a huge sense of optimism for the border communities – however, it has also created a schism between the northern communities and Mexico's state governments. The northern mayors do not feel attended to by the state government because the state government pays attention to and gives resources mostly to the southern region of the country. There are about 40,000 people that live in Nogales. Most adults in this city are dependent on cross border trade for businesses. There has been huge growth in the number of production facilities in Mexico that manufacture a variety of high-tech products, like aircraft engines and 1.5 horse power motors. The entrepreneurial spirit is alive and well in Sonora, and these production facilities are partly responsible. For example, craft beer was introduced to Mexico last year when Mexican and American craft breweries joined together to ease the production process. The raw materials for craft beer had to cross the border six times during this process before the two countries joined together in this business. In the international landscape, there are many opportunities for entrepreneurs to have an idea and replicate it in Mexico. The Department of State is responsible for giving Americans ideas on how to invest in Mexico or taking Mexicans to the U.S. to invest. Staab helps citizens in both countries navigate the regulatory landscape.

Conclusion

Staab's presentation included a variety of information about cross-border business between Mexico and the United States. At the end of her speech, she claimed, "Our government needs to do better – we need to make sure our representatives are taking positions that are not so extreme so that we can find some common ground and start there." I was unaware of the complexity and challenges that arise at the ports of entry on the U.S.-Mexican border. However, the future implementation of new technologies and increasing investment incentives will hopefully ease this process. It is pleasing to hear that Staab is constantly working to increase cross-border business while decreasing the amount of contraband that crosses between our two countries. Although taking your business international is somewhat risky, Staab's role to protect American citizens and maintain a good relationship with Mexico eliminates many of those said-risks in cross-border business. If you want to look at the international environment, you must look at what is happening in the legal environment in the two countries in order for your business to prosper. `

Traveling to Mexico

Laura Provencher, the Associate Director of Global Residency at the University of Arizona, spoke to our class about travel safety when travelling to Mexico. Laura briefly outlined her main objectives: sharing travel safety best practices, identifying and mitigating risks, preparing to address problems, and registering your trip. She explained how she learns something new every time she speaks to a group of people about traveling, so it was our job to give her tips and stories about our own abroad experiences. When you travel internationally, everything is not always going to go as it was planned. Laura helped our class prepare for our future travels with her presentation, including details on safety concerns, research, planning ahead, smart lodging, frequent travelers, medical considerations, and registration.

Top Safety Concerns

When traveling internationally, we must be aware of our top safety concerns as foreigners. Laura outlined the two most crucial safety concerns to think about: mental/physical health and crime. As our mental and physical health should be a top priority in our daily lives, it should especially be a top priority when traveling abroad. Different countries expose us to different health concerns, such as new diseases, pathogens, etc. Injuries are also common as we experience new places. Driving on unfamiliar roads can lead to distractions, accidents and, therefore, injuries. In Mexico, the streets are not as well-lit as streets in the United States. Although we will not be driving our own vehicles on the upcoming class trip to Mexico, Laura thought this was important information to share with us. In terms of crime, foreigners are often easy targets. Getting things stolen when traveling is very common. According to the consular office, Sonora is rated as a level two risk in the United States.

Research, Plans & Preparation

According to Laura's experience as the Associate Director of Global Residency, the Eller College of Management does an amazing job at organizing trips for students. As entrepreneurs, Laura claimed we will often have people planning our trips for us in the future. However, you must always have some level of involvement in your own travels – you should be researching your destination(s), thinking plans through, and not blindly trusting everybody to know what you know. You can conduct research about your destination through several platforms, including the U.S. Department of State, the British Foreign Office, Australian Smartraveller, Canadian Travel Advice, general travel guides, the CHUBB travel application, and lastly, the internet. Know your destination and identify your vulnerabilities – in other words, do some soul searching before traveling internationally. Laura said we need to know ourselves, and if we consider ourselves to be trustworthy, keep this in mind. It is important to know what can make you a target. Pay extra attention when traveling, especially when using a phone. If you are not aware of yourself and your surroundings, you might be taken advantage of or stolen from. When planning a trip, have multiple plans and know your resources – if something unexpected happens when you are traveling in a different country, you must be prepared to change direction and notify any supervisors that might be with you.

Smart Lodging

With travel comes lodging, so Laura outlined the importance of making smart decisions when staying in a new environment. If you are staying in a hotel, you should put your belongings, including a passport, in the safe if you are not planning on keeping it with you when you leave the room. Any traveler should keep the second lock or latch on the door locked for safety reasons. Water is not filtered or considered safe to drink in certain countries, so you should be careful about drinking and brushing your teeth with the tap water when traveling. Finally, any traveler should check the fire routes wherever he/she is staying. When Laura was on a vacation in Washington D.C., she decided to check the fire routes of her upscale hotel. To her surprise, the fire routes in this particular hotel were being used as storage. She notified hotel management and, in turn, made a note to advise future travelers to examine fire routes in case of emergency.

Frequent Travelers

If we know people who are frequent travelers, we often trust them to give us accurate information about certain countries and cultures. So, why should we be worried? Laura claims that this type of trust can result in too much comfort and complacency. She urged our class to think about situations where we were too comfortable. For example, if I were to drive home after class one day, I might arrive at my destination without knowing how I got there because I drive along that route frequently. However, if I were to drive in a new city to a new location, I would be alert and paying close attention to the cars and streets around me. That being said, although advice from frequent travelers can be valuable, we must remind ourselves to pay attention and stay alert when abroad.

Medical Considerations

It is important to know the medical risk factors when traveling internationally. Many medical risk factors can be researched through the CDC and WHO Travelers' Health. Travelers should be aware of immunizations, health insurance, and medications. If we are traveling with medication(s), Laura advised us to keep it in its original container and carry extra on hand in case of emergency or a change in travel plans, such as a cancelled flight. If possible, carry a prescription written in the destination's primary language. If the generic name of a medication differs from the name written on the prescription, a traveler should make note of it – names of medications vary internationally. Laura also told our class a story about a University of Arizona student who traveled to Spain and woke up paralyzed one morning on her trip. She did not have any health insurance, so the hospital in Spain would not allow her to receive the type of treatment she needed. It is extremely essential to be aware of medical considerations when traveling internationally.

Registration

Laura provided our class with a checklist in regard to registration for the upcoming trip to Mexico. We must register in STEP, the Smart Traveler Enrollment Program, before departure on Thursday, February 21st. Other bullet points on this checklist included medicine, passport, phone/computer, insurance, and a packing list. The emergency number to contact in case something goes wrong is (520)-307-9576. Finally, we should inform our parents, teachers, and other students traveling to Mexico about the advice Laura gave our class.

Conclusion

In conclusion, Laura's presentation on travel safety was extremely informative and valuable for anyone travelling to Mexico. Doing research, planning ahead and preparing for an international trip is crucial to maximize safety and enjoyment. Different countries have different laws, regulations, environments, and cultures. Therefore, it is important to educate yourself on these differences, especially when it comes to health concerns and crime. Being aware of your surroundings, even in the comfort of lodging, is essential for personal well-being. Although you may know someone who has traveled to Mexico before, you should always rely on your own research and knowledge to avoid the risk of being too comfortable in an unfamiliar environment. Finally, it is important to be aware of yourself. It is crucial to identify certain components of your personality that might lead to risk when traveling abroad.

Athena Virtual Reality - Business Plan

Athena Virtual Reality & Cross-Border Business in Mexico-Sonora

Mexico's emerging and growing market has led to an increase in cross-border business and collaboration with the United States. Businesspeople and entrepreneurs in the U.S. have jumped on the opportunity to establish and/or launch a company across the border for many reasons – one of these reasons being the booming tech scene in the Mexico-Sonora region. According to an article written by James Paine, "Mexico has always been towards the forefront of the high-tech manufacturing industry" (Paine 2018). American technological entrepreneurs can greatly benefit by operating in Mexico's tech industry due to the lower labor costs and tariff-free technology imports (Paine 2018). Regardless of the lower labor costs, businesses in Mexico have an equal amount of technological expertise as those do in the United States. Educational institutions in Mexico have contributed to the success in the high-tech manufacturing industry by cultivating student innovativeness and professionalism. Our honors entrepreneurship class had the opportunity to visit the Tecnológico de Monterrey in Mexico-Sonora this year. The Tecnológico de Monterrey website states "we are constantly innovating our academic offer to integrate scientific and technological real challenges to solve social problems" (Tecnológico de Monterrey 2019). After meeting several mentors, educators and students during our visit to the school's campus, it became clear that the Tecnológico de Monterrey is one of the educational institutions that has significantly contributed to the rapid growth of the technology industry in Mexico.

Athena Virtual Reality (VR) aims to solve an educational problem through the use of technology. 80% of college students change their major at least once and 60% of students take more than 4 years to graduate (Anschuetz 2015). Athena VR's goal is to utilize virtual reality and have universities display what they offer to prospective high school students. We know virtual reality is a booming industry and will be used more and more in education technology. Not only that, according to Holon IQ Smart Estimates, the VR/AR industry in advanced education technology is predicted to grow from $1.8 billion in 2018 to $12.6 billion in 2025. This is by far the largest in terms of growth and size in the advanced educational technology realm. This social innovation enables students to graduate on time which leads to an on time start to their careers.

After pitching Athena VR's business objectives to a team of mentors at the Tecnológico de Monterrey, our team learned that Athena VR can utilize successful examples and information about companies operating in Mexico-Sonora's booming technology industry. The mentors discussed several examples of technological entrepreneurs, including students, who have created VR products to solve social issues. Although the use of VR in Mexico has been increasing, the mentors informed our team that products and services similar to Athena VR have not yet been established in the region. Although Athena VR only plans to sell its product in the U.S. for the first five years of operations, the educators at the Tecnológico de Monterrey confirmed that students in Mexico-Sonora equally struggle with the issue of professional and educational uncertainty. That being said, Athena VR has the opportunity to learn from Mexico-Sonora's success in the high-tech manufacturing industry and, in the long run, expand its operations to engage in cross-border business opportunities.

Executive Summary

The fast growth and constant evolution of modern technology has transformed the way our education system and job market operate. The shift from traditional methods to digital systems has made it nearly impossible for the younger generations to make an informative decision about their professional future, especially for a future involving STEM education. Shrinking education budgets and a lack of funding for technological resources has made it extremely challenging for high schools' students to make informative decisions about their career passions. This lack of knowledge and experience surrounding potential career opportunities has become a predicament for college universities because about 80% of students in the United States change their major at least once throughout their college career (National Center for Education Statistics). Universities are losing an opportunity cost 1.86% each time a 5th or 6th year senior is taking the seat of an incoming freshman. Students are not only changing their major, but they are also transferring colleges thus paying for extra money on class units.

Our solution to this problem is to provide universities with an engaging technology to help future students feel confident about their future choices in college. Universities will be able to broadcast virtual university tours, classroom simulations of different majors, and more. Our software will visualize college life content and incorporate game-like features to improve overall confidence in junior and senior high school students. Our product will also reduce expendable costs for schools by providing universities with visual ways to perform campus tours. With the implementation of our virtual reality software, we intend to virtualize a variety of university highlights to help students graduate in four years.

The market and audience for our product has been determined in order to benefit the lives of junior and senior high school students. The "Early Adopters" for our educational virtual reality product will be the administrators and/or board members of degree-granting postsecondary institutions (colleges/universities) due to their positions as leaders and access to finances in high levels of education. These administrators are the second persona in the market for our product. Our first persona, junior and senior high school students, will serve as the "End Users" for our product. The university administrators are responsible for making decisions about budgets and investments in student resources, including educational technology, thus also serving as the "Decision Makers" in our market. Because university administrators are motivated to increase 4-year graduation rates and recruit prospective students, they will be open to the idea of purchasing an educational technology tool that provides the opportunity to reach these goals. The "Influencers" for Athena VR will include competing school districts, the teachers and parents of high school students, and the students themselves. These influencers are driven by the objective to save costs, increase graduation rates and ease the decision-making process for our end users, thus being an extremely important segment of our market. Our SOM is the University of Arizona (UA) for the first year of our operations. Nearly 34,000 students applied to the UA in Fall 2018 (College Data 2018). In year two, we are hoping to grow our market to include additional colleges/universities in Arizona and in the state of California. By year four, we aim to target colleges/universities along the Western coast of the United States. Our market will scale to the majority of colleges and universities the nation by year five. There are 4,298 degree-granting postsecondary institutions in the U.S., and nearly 3,568,000 high school students in the U.S. were expected to graduate in 2017 (National Center for Statistics 2018).

A significant portion of our budget will be dedicated customer acquisition and research and development to create a sophisticated virtual reality product. Since we are a simplified product, we are competing on sales volume. Our five-year sales forecast outlines our progress for our simplified product, but in future years we plan to develop a more premium version of our product for a more sophisticated audience. We are funding our venture through personal funds from our founders, small-business grants, and microloans. We plan to obtain funding through venture capitalists to expand our business and eventually hope to merge with one of our competitors.

Incorporating modern technology into our education system will add an invaluable source of knowledge for better-informing students of university experiences and majors. As our product becomes widely adopted, we prepare for a future partnership with major influencers in the education system, as well as large content-creation companies. By focusing on universities who will then distribute the product to high school students, we will have the advantage of being one of the first ventures to target junior and senior high school students. Our venture will start as an LLC as the five founders take the chairs as key management. As the company expands, so will our staff, as we hire more engineers, sales representatives, and accountants.

The Problem / Need / Pain Point

The fast growth of technology and the constant changes in the industry and job market has made it impossible for millennials to make an informative decision about their future career path. In an annual national survey conducted by a research institute at UCLA, 86% of incoming freshmen claimed that they were confident they would graduate in four years. However, according to the National Student Clearinghouse Research Center, only 41% of students at public universities and 61% of students at private four-year universities actually accomplish this task (Marcus 2018). In a time of shrinking education budgets, it's difficult if not impossible for high schools to expose their students to a range of industries and professions that sufficiently inform those students on college and career decisions. Most high schools do not have enough funding for educational technology to improve overall student performance or demonstrate how students benefit in the future from STEM subjects through their lab classes. Whether a student is a genius or a struggler, the fact remains that 65% of the population consists of visual learners; therefore, when teachers lecture, they are reaching less than half of the class. Students are in need of learning strategies that accommodate their learning styles (Vakos). This lack of knowledge and experience surrounding potential career opportunities, especially in STEM careers, causes more than 80% of students in the United States to change their major at least once throughout their years in college (National Center for Education Statistics). Of the students who declare a STEM major in college, 35% of these students change their major within three years of enrollment (U.S. Department of Education 2017). Changing majors may cause students to increase their workload, take summer and/or winter courses, or stay in college for additional semesters, all which cost the universities around $1,000,000 per year because these universities are not gaining increased tuition costs from incoming students. With tuition rates increasing 3.1% per year for newly admitted students, and 60% of students taking more than four years to graduate, there is a 1.86% opportunity cost in lost revenue (USAToday). There is also a high opportunity cost for students who do not graduate in four years; these students are missing out on working and earning an income with a professional job sooner in their life, missing out on retirement savings, and missing out on graduating with the peers they spent four years with. On average, college students change their major at least three times over the course of their college career, thus obligating students to endure these high costs.

The Market / Audience

We believe there are two major beneficiaries/personas for our product.

By narrowing our target market demographic to junior and senior students that attend a charter or private high school in Arizona, our team will be able to dive deeper into understanding the psychographics of our first persona.

Consumers do not buy products for the attributes they possess, but for the goals that they help them attain. That being said, our product will be helping high school students attain their goal of making a more informed decision for their futures.

The "Early Adopters" for our educational virtual reality product will be the most influential people within the market. Early adopters are classified as leaders with reasonable access to finances and high levels of education. The early adopters for our product will fall in our second persona, the administrators and/or board members of degree-granting postsecondary institutions (colleges/universities) in Arizona. These administrators will be people who provide our first persona, high school students, with the product because they are responsible for making the decisions regarding investments in student resources, such as educational technology. Financial and political realities have motivated this persona to fix the longstanding problem of college students not graduating in 4 years. These students ultimately use up dwindling state subsidies in addition to financial aid and housing (Marcus 2018). Legislatures are also increasingly restricting universities' budgets to the fraction of their students who graduate on time (Marcus 2018). Dhanfu Elston, vice president of Complete College America, is an advocate for on-time graduation rates. Elston claims, "institutions recognize that there's a benefit to them… in the long run it's going to save the institutions money, it's going to save the students money, it's going to save taxpayers money" (Marcus 2018). Budget restrictions, cost savings and political pressures have all contributed to the large incentive for universities to think of new ways and resources to increase 4-year student graduation rates. Universities are not only motivated to raise graduation rates, but also to recruit new students. High competition exists among colleges and universities across the nation, thus creating an incentive for universities to attract as many talented high school students as possible. Board members at universities, specifically admissions personnel, are actively brainstorming strategies and seeking resources that will sway high school students to apply and select their college/university over another. Dean Schmill, dean of admissions at Massachusetts Institute of Technology (MIT), claims MIT "puts almost all of its energy into creating a website that offers an accurate picture of what our university is like and what it would be like to study here" (Whitehead 2012). Universities across the nation are struggling to create a way for prospective students to experience life at their school without having to spend time and money on travel. This persona is motivated to implement a resource that will entice high school students to apply. The university administrators will essentially be the “Decision Makers” for our venture as well. More specifically, the administrator in charge of the annual budget for the university, specifically the budget for student resources, will be the main decision maker.

The influencers, the person impacting the outcome of the decision to invest in our product, are the forces driving universities to invest in resources that will increase the percentage of college students who graduate in four years. One feasible influencer in the market are the teachers of our first persona (high school juniors and seniors). These teachers want what is best for their students, so they are willing to use any strategy or resource to help students reach their full potential while also preparing them for a future college career. When colleges/universities distribute Athena VR’s products to local high schools nearby, the teachers would be responsible for implementing the virtual reality software into the classroom for students to use. This influencer will have an impact on the outcome because they will be the ones persuading university administrations to purchase Athena VR’s software to help students gain knowledge about their future endeavors. Teachers who are currently using EdTech to grow their students share many common characteristics. These teachers are flexible, have a growth mindset, embrace change, plan ahead, collaborate with other schools, and most importantly, are student-centered (Lynch 2017). Integrating EdTech into a classroom can be a challenge – technology is constantly evolving, so the teachers that will serve as our influencers must be willing to adapt and view this change as an opportunity rather than a deterrent.

Other influencers may include competing school districts, parents, and the government. According to an article found on EdSurge, an online provider of news and resources in the EdTech industry, software’s “rapid penetration” into education has transformed the way students are learning in a classroom environment (Carolan & Gong 2017). However, Edsurge still believes that “educators, parents, and mentors are at the heart of the learning process” (Carolan & Gong, 2017). Human emotion is tied to the learning process, so a student’s supporters in the education system are responsible for motivating them to engage in the learning process. That being said, the teachers and parents of the students are extremely important influencers for our product. According to Marisa Nickle, the University of Washington’s senior director of strategy and academic initiatives, explains that there is a great pressure from parents of students to increase on-time graduation rates (Marcus 2018). Nickle says, “[parents] are shouldering more of the tuition… and there’s really a focus on return on investment” (Marcus 2018). Similar to teachers, the parents of high school students are motivated to increase the success of the students, their children. Parents will drive universities to invest in Athena VR to save money and decrease the chances of their children falling behind in college.

The students who desire to use the educational virtual reality software will also be influencers for our venture. Elston claims, “no one had ever spelled it out for them that taking 12 credits meant they would be falling behind in college from Day One… when you go to college, you don’t know how to do college (Marcus 2018). Many students apply and choose a university without visiting the campus and without the knowledge of which major to choose. Students do not want to pile up debt by spending additional time and money in college; therefore, they are motivated by the notion to save money, graduate on time, and get started on a career to earn an income. Michael Troksa, a mechanical engineering major, works in the summers designing web pages to help him pay for college. He said, "usually the people who are going to be falling behind are the people who are switching majors or get here without knowing which direction they're going" (Marcus 2018). By supporting the idea of implementing our product into the school system, students can persuade universities that Athena VR will help them attain their goal of making an informed decision about their choice of university, major and future profession. These students are most likely influenced by their parents, peers, mentors, and past experiences.

The "End Users" for our product will be our first persona – the students. Based on our research, students should be exposed to college and career education at a young age. We hope to get our virtual reality product in the hands of the demographic that will most greatly benefit from our solution. Once the decision-making and influencing stages are finalized by the university administrators, the students will be the consumers actually using our product in a high school classroom environment. Consumers in this persona are primarily motivated by the thought of their future success and the discovery of their individual interests.

If we sold at least ten units of our product to 11% of these schools, we will reach units sold that we projected based on our growth rate. Our growth rate is based on virtual reality and augmented reality industry growth as well as software startups growth in the first 5 years of their business.

Our target market begins with our SOM being the University of Arizona (UA) for our first year of operations. Our team attends the UA and believes target this university will be the most reachable market. Eight-thousand new students were admitted to the UA in 2018, thus providing an insight into the number of students that could benefit from the use of Athena VR's product. In year two, we are hoping to grow our market to include additional colleges/universities in Arizona and in the state of California. By year four, we aim to target colleges/universities along the Western coast of the United States. Our market will scale to the majority of colleges and universities the nation by year five.

There are 4,298 degree-granting postsecondary institutions in the United States: 1,626 public institutions, 1,687 private nonprofit institutions, 985 private for-profit institutions. The total enrollment for these 4,928 institutions is 19,765,598 students (National Center for Statistics 2018). These institutions serve as the buyers in our market, thus providing Athena VR with an opportunity for scalability after the UA (SOM) invests and utilizes the virtual reality software. About 3,568,000 high school students in the U.S. were expected to graduate in 2017 (National Center for Statistics 2018). These high school upperclassmen serve as the end users in our total addressable market. We predict we will capture about 42% of the end user total addressable market in year five. By selling nearly 1.5 million subscriptions, we will reach about $24 million in revenue.

The Solution

Product / Service Mix

Virtual Reality presents an opportunity for the education system to increase the learning process and capabilities of students. Through a subscription-based model, we are offering a super edgy engaging technology for Universities to broadcast their courses and services to high school students. The content displayed on our application will provide students with virtual university tours, classroom simulations of different majors, and more. For classroom simulations on different majors, we will begin to focus on STEM classes and careers because over 1/3 of all STEM majors drop out over the course of their college career (CollegeBoard). In the future the content will expand to other subjects. This content will be displayed on lower cost virtual reality technologies through a smartphone device, just like Google cardboard. Facilitators will use a purchased access code to download the application, so the content can be unlocked. Universities will be able to use Athena Virtual Reality as a recruiting tool for their own University. For example, students will be able to see what it is like to be a computer science major and the benefits that it incurs in the long run. This helps the students because they are able to gain more certainty over their future major and goals. Our technology will take the EdTech industry to the next level, benefiting both the University and the students.

Value Proposition

Universities will use our platform as a recruiting tool and to educate students about majors, career paths, and how to make the most efficient use of time at school so they are able to graduate within 4 years. Universities on average spend $536 per student recruit, and about half of that amount is allocated toward travel and events (RNL 2018). Allocating $100 per student for the use of Athena VR's product will reduce these travel and traditional marketing costs, thus decreasing the current recruitment expenditures by 15%. If a university invests in Athena VR's product, the new recruitment cost per student would be about $460.

Tuition rates are increasing 3.1% per year for newly admitted students; however, 60% of college students are taking more than 4 years to graduate (CollegeBoard 2019). This results in a 1.86% opportunity cost in lost revenue for universities. The national average revenue per student who attend 4-year institutions is $6,100, so the opportunity cost ends up being $113.50 per student (CollegeBoard 2019). To put this into perspective, if 10,000 5- and 6-year students are taking the spots that could be filled by newly admitted students, the university would lose about $1,135,000 in opportunity cost. This would be based on the assumption that tuition does not rise for students once they are enrolled

If a student attends a public university, the cost of an extra year of college ends up being $147,026 per student and two extra years is $282,691 per student (Forbes 2018). According to Dr. Bob Neuman, a former associate dean of academic advising at Marquette University, when students enter into college freshman year, they often take a relaxed approach to college. Athena VR wants to prepare students at a younger age so they can hit the ground running when they enter college to make the most of their time and money spent.

“Students who stick around for more than four years, after all, use up dwindling state subsidies, financial aid, and housing, and legislatures are increasingly tying public universities’ budgets to the proportion of their students who graduate on time” (Marcus 2018). Paul Francis, executive director of the Washington State Council of Presidents, which represents four-year public universities believes that when students graduate in four years they become happy alumni, which will save this 1.86% opportunity cost (USAToday) in lost revenue to universities that are struggling to find solutions to improving graduation rates, and Athena VR will provide a unique solution that has not been considered.

In the long term, this value will impact businesses and communities because students taking initiative and getting started earlier will lead to a stronger and more engaged workforce, which will incentivize business leaders and professionals in the community to partner with us to create content that attracts students. The breadth of individuals and institutions that our product will add value to is boundless.

The Environment

Industry Description

The educational technology industry is growing at a rapid pace. In 2017, global investments in education technology crossed $9 billion - a 30% jump from 2016 (Singh 2018). Educational technologies aim to promote learning and improve performance. Growth within the “EdTech” industry is largely attributed to the expansion of the product landscape as new technologies are entering the market daily. The nature of technology requires companies and products in the industry to constantly evolve in pursuit of satisfying the needs and wants of each consumer. 813 EdTech companies were funded in 2017, and the U.S. was responsible for 58% of the global investments in these companies (Singh 2018). Countless opportunities exist within the EdTech industry. The global education industry itself is a $6 trillion (USD) industry and is expected to reach $8 trillion by 2025 (Holon IQ 2019). However, less than 3% of global education expenditure is allocated toward technology (Holon IQ 2019). Holon IQ claims that the application of advanced technologies, such as virtual and augmented reality, in education and learning processes will increase and ultimately be integrated far and wide by 2025. The combination of the lack of technology use in education with the mass global market expenditure in both the education industry and technological industry has paved the way for EdTech companies to prosper in their endeavors. According to the School of Education at the American University in Washington D.C., the global EdTech industry is projected to a $93.76 billion industry by 2020 (School of Education 2019).

Although investors are attracted to the innovation and creation of startup companies in the EdTech industry, the fragmentation of the industry is an important subject to consider. Many school districts have already implemented student information and learning management systems in the last few years, including data systems focused on human resources (Molnar 2016). The implementation of EdTech products into school systems takes much longer than the time it takes to acquire such products (Molnar

2016). There is currently no leading company that dominates the market in the EdTech industry, meaning competition exists between hundreds of smaller EdTech businesses rather than a few key players. The significant amount of time and thought that is required for school systems to purchase and install EdTech products has led to school administrators carefully deliberating which company would suit their specific curriculum best over time. It is easier for a startup company to penetrate the EdTech market considering there is no predominant company that is currently controlling most of the market share.

Characteristics & Trends

One trend that has remained stable over the course of time in the EdTech industry is the desire to increase the accessibility of educational technology products to more people (Singh 2019). By lowering the cost and increasing the adoption of educational technology products, accessibility will expand over time. Becky Sage, the CEO of Interactive Scientific, believes efficacy is the most important trend in the EdTech industry today. She claims, “the metric of success is whether we are delivering an education ecosystem that gives learners the opportunities to thrive in 21st-century careers solving 21st-century challenges” (Singh 2019). EdTech professionals intend to increase the quality of a student’s learning experience. The use of AR and VR in EdTech products is expected to rise as the development of these technologies continues to increase in the near future. Many postsecondary degree-granting institutions have already jumped on the opportunity to utilize EdTech, specifically VR, to help their students graduate on time and prepare for their future careers. In its Center for Innovation in Teaching and Learning, Lehigh University has been actively training its teachers and students to utilize VR systems in order to gain hands-on experience in technology (Brereton 2018). The Savannah College of Art and Design (SCAD) has incorporated high-tech VR products into its recruitment strategy. SCAD sent Google Cardboard VR headsets to “30,000 accepted students to let them visually explore the school’s campuses in Atlanta and Savannah, Georgia, Hong Kong, and Lacoste, France” (Brereton 2018). Within 12 months of starting the program, SCAD experienced a 26% increase in student admissions. After the success of the VR recruitment strategy, SCAD created a detailed view of its school with AR videos of its current students’ creative college sessions to show prospective students (Brereton 2018). The increasing accessibility of EdTech products, along with the growing amount of success stories about colleges/universities implementing VR into their recruitment and graduation strategies, will drive institutions to invest in these products to benefit students and the education system.

Competitive Analysis

In terms of competition, the market in which Athena VR falls into is fragmented. A couple of small-scale companies have attempted to create a product similar to Athena VR’s educational software, however, there is no dominant leader in the market. Unimersiv and Nearpod, two companies that offer a product providing experiential education through technology, are considered to be Athena VR’s top competitors in the market. STRIVR and zSpace are two additional competitors in the market that use virtual reality to create simulations. Unlike Unimersiv and Nearpod, STRIVR and zSpace focus on professional training and on-the-job situations to learn more about careers instead of academic education. Through our research and analysis, we have identified these four companies as Athena VR’s top competitors in the fragmented market (See Appendices: e. Competition)

Athena VR's competition exists in the educational technology industry. Unimersiv is considered to be the largest platform for virtual reality educational experiences. Rather than spending additional time and money on field trips, Unimersiv provides school administrations with the opportunity to expose its students to real-world issues and experiences through technology. Users of the product are able to visit places and participate in situations that would otherwise be unfeasible given the high cost and physicality of traveling. Unimersiv was founded in 2015 and established its headquarters in Silicon Valley, the home to many start-ups and global technology companies. The virtual reality company is funded through seed money and operates as an application that can be downloaded on any virtual reality headset.

Unimersiv is a major competitor for Athena VR considering both companies aim to increase exposure to real-world experiences through educational technology. Unimersiv's mission is to help students of all ages learn faster using virtual reality. It also incorporates VR to reduce training costs and eliminate risks for organizations hiring new employees. However, one area of education that Unimersiv does not address is the issue that Athena VR aims to solve. Because Unimersiv is the largest platform for VR educational experiences, colleges and universities would not be able to utilize the platform to add customized campus and classroom tours for their unique institution. Athena VR would provide these institutions with an EdTech product that they would be able to personalize and modify to aid and attract prospective students.

Nearpod Inc. is a company that offers an interactive classroom tool (mobile application) for teachers to increase student engagement with interactive lessons. Unlike Athena VR's use of virtual reality, Nearpod offers its solution through the use of synchronized iPads and/or mobile devices in the classroom. With Nearpod, teachers are able to easily deliver collaborative content and multimedia presentations to students while receiving instant feedback from them through features such as polls, quizzes, drawing, activities, and more. Nearpod is considered an "Early Stage Venture" with a Series B funding type. The total funding amount for Nearpod is at $30.7M, as they received $500K during a seed round in March 2013, $9.2M in May 2016, and $21M in March 2017. While Nearpod and Athena VR both offer a technological product for educational purposes, Nearpod's value proposition does not address future career paths. Although students will essentially learn more academic material through increased engagement, Nearpod does not aim to bridge the gap between academic curriculum and its usage in the real world.

While Nearpod and Athena VR both offer a technological product for educational purposes, Nearpod's value proposition does not address college/university recruitment, graduation rates, or future career paths. An increase in student engagement with interactive lessons has the potential to increase educational knowledge among students, thus making a college or professional decision easier to make. However, unlike Athena VR, Nearpod's product does not address the issue of decreasing 4-year graduation rates. Nearpod's mobile application also does not provide students with the "immersive" experience that Athena VR's software does. As Nearpod and Athena VR both operate in the EdTech industry, they do not address the same issue of students being unable to make an informed decision about their future college and professional career path, thus resulting in a longer amount of time spent in educational institutions.

STRIVR is another competitor that uses VR to simulate real-world job situations for educational purposes. Focusing on employees rather than students, STRIVR creates value for professional companies by utilizing technology to effectively train and develop personnel in pursuit of increasing employee engagement and retention. By decreasing training costs while increasing productivity and performance, STRIVR has established a name for itself among Leading Fortune 500 companies and sports teams in the U.S. Similar to Unimersiv, STRIVR's headquarters are in Silicon Valley. It operates as an Early Stage Venture with a Series A funding type. The total funding amount for STRIVR is currently at $21M, seeing that $5M was acquired during a seed round in December 2016 and $16M was acquired through the same method in 2018.

Athena VR and STRIVR both offer an immersive experience to prepare users for important situations, such as choosing a profession in a certain industry. Although STRIVR's target market is not centered around juniors and seniors in high school, the company's value proposition closely aligns with that of Athena VR's, thus making it a key competitor in the market. However, STRIVR fails to address the problem about student graduation rates in colleges and universities. Educational institutions would not invest in STRIVR to increase recruitment rates and/or decrease 5- and 6-year graduation rates.

zSpace differs from the other three competitors as it primarily focuses on STEM education and medical instruction. However, similar to STRIVR, zSpace provides users with educational experiences in VR for corporate training and research. The company sells its products as an all-in-one, including computers and laptops with AR and VR capabilities. The hardware includes zSpace's software comprised of learning applications. zSpace defines its learning experience as educational technology in a student-centered environment, where its products can be used in classrooms, labs, media centers, and makerspaces. According to the company's website, "zSpace applications engage students in standards-based learning experiences that align with the curriculum" (zSpace Inc. 2019). Founded in Silicon Valley in 2007, zSpace operates as a venture with an unknown series funding type. $26.6M of funding was acquired in May 2016 and $30M in November 2015, totaling $56.6M in funding for zSpace.

zSpace and Athena VR both provide an immersive experience by using VR in student-centered environments. By targeting students, both products are able to increase student engagement and motivate them to make better decisions about their future. Similar to the other three competitors, zSpace's virtual reality product does not provide students with virtual tours of university campuses or classrooms. Although Athena VR does not address some of the educational topics that zSpace does, such as geography and the arts, it gives students the ability to increase educational knowledge beyond certain topics in their current curriculum. Colleges and universities would be able to use zSpace as a tool to enhance the learning environment in classrooms, but they would not be able to use zSpace as a recruiting tool for prospective students.

Opportunities for Coopetition / Partnership

Arizona Education Association

The Arizona Education Association is the largest professional association for public school employees in Arizona. AEA was formed over a century ago in 1892 when a group of Arizona educators banded together to protest the use of 14-year-old textbooks. Since then, AEA continues to take the lead in advocating for support of Arizona's public schools, improving the quality of public education through positive change, and improving the professional lives of teachers and school staff members. AEA members are teachers, community college professors, counselors, speech pathologists, bus drivers, secretaries, retired educators and student teachers. They belong to more than 150 local affiliates across Arizona. AEA is a professional association and a labor union, advocating on behalf of students, staff and teachers in Arizona.

A partnership with the Arizona Education Association will enable Athena VR to take advantage of the network that the Arizona Education Association has. AEA's network of education experts are a critical part of our content development and employment strategy and we plan to partner with them by utilizing their network to become adopted by our first market: Arizona Universities. Their protest against textbooks shows their passion for the future and can be helpful in the movement of educational technology, such as virtual reality, in the classroom. As for the Arizona Education Association, their educators can benefit from the perks of implementing technology in the classroom.

Arizona STEM Network

The Arizona STEM Network, led by Science Foundation Arizona, is a collaboration between businesses, educators, government and philanthropy with a common agenda to graduate more Arizona students that are prepared for the global economy through Science, Technology, Engineering and Mathematics (STEM) education. The Arizona STEM Network (Network), enjoys support from Arizona's former and current governor, large corporations, CEO organizations and philanthropies. To achieve its vision of a qualified Arizona workforce that stimulates the economy, the Network is focused on the following: creating meaningful business engagement opportunities in education, strengthening teacher effectiveness in STEM, integrating STEM into schools and districts, changing the culture and community fabric to embrace STEM, and measuring outcomes. Within these areas, the Network will work toward scaling proven successes, building an infrastructure to support and expand the work of multiple organizations, and instituting technologies and practices that enable information and resources to be shared statewide.

A partnership with the Arizona STEM Network will enable our company to produce high quality content ideas. The network of professionals is passionate about educating students on STEM in the classroom, so they will be a great support system for our company. The Arizona STEM Network has the same primary goal as Athena VR - to better educate and prepare students for STEM careers. The Network would be a beneficial partner to our company by assisting in the creation of the content outline for our virtual reality software. The Arizona STEM Network will be enthusiastic about adding an additional cutting-edge technology for students to use in the classroom.

VironIT

VironIT is a software development company that uses a well-balanced set of technology skills to build incredible virtual reality experiences. VironIT VR development teams focus on custom solutions for various leading VR headsets and platforms, including HTC Vive, Windows Mixed Reality, and more. It also offers state-of-the-art game development, using specific gaming engines like Unity and Unreal Engine.

The company uses their extensive experience to ensure that clients have the best technical solutions to solve their business challenges while delivering value for their organization.

VR Vision

VR Vision is an extended reality (XR) company that provides immersive technology solutions for business. They provide virtual reality, augmented reality, 3D and 360-degree video, and web/mobile apps. The company creates custom platforms for immersive training using cutting edge virtual and augmented reality development.

VironIT and VR Vision are both crucial in helping us create the content for our software. Athena VR would be able to gain new knowledge from their staff expertise and experience to improve our technology team's skills. VironIT specializes in gaming, a component of educational technology that increases student engagement. VR Vision specializes in 3D 360 video and augmented reality which will ultimately advance and improve our technology in our future operations. VironIT and VR Vision's experience with other leading companies in the technology industry would provide us with knowledge about industry competition and how to become a dominant player in the market. We hope the partnerships with these two companies in conjunction with their connections in the EdTech industry will guide our software to become a "bundled product" in the future.

The Venture

Venture Description

Athena Virtual Reality will tackle the deficiencies in our current education system and its reliance on traditional tools. Our product aims to better inform universities and students of the importance of graduating in four years. By the help of virtual reality, we hope to create a virtual environment that would simulate real-life university scenarios and also provide schools with marketing for their different programs and events, that otherwise would not be attainable through a campus representative. Our product will help students achieve success in the classroom and in life, by connecting the dots between what they can learn in school, and how they will apply it to interesting career paths down the road.

Mission, Vision & Values

Our mission is to provide a more realistic view of college experiences for the nation's youth. By enhancing the quality of our educational system, our venture will help lead younger generations to graduate in four years. We are hoping to expand our multi-platform product throughout different universities and provide a better perception of the importance of finding your passion early on at a fraction of cost. And as a result, our venture will be a part of the movement to distribute knowledge and wealth throughout the globe.

Business Model

Our venture's main job will be to create content to be used in currently available VR/AR headset in the market, specifically for the education industry. Initially, we will mainly target Arizona universities due to their higher buying power and their interest in using new tools that could help them attain their goals of improving the overall quality of their education system. Our content will be sold as a subscription with a semester lease term. We plan to follow a tiered approach to our product development and pricing strategy in order to accommodate different consumer price points and regional economic levels. Though by initially focusing on the more simplistic environment and thus selling our product at an affordable price, we will create a healthy margin. Once we have our foot in the door and create brand loyalty with the customers of our more sophisticated product, we will create a more simplified experience that can be implemented into classrooms using standalone VR sets. This version will provide many more experiences at a lower price to a higher volume of customers.

Sources of Competitive Advantages

Our product ties in components of successful VR apps created by similar companies into one idea. This links classroom learning with professional training. There is also a moat around our product – once we cross it, our customers will remain loyal to our educational technology. We will have a long-run societal impact on the education system as a whole.

Go To Market

Sales & Channel Plan

Our sales and channel plan will focus on selling our product to universities. When we are advertising our product, we want to establish a presence for our brand at educational technology shows and magazines. Another potential sales channel for Athena VR is YouTube, an American video-sharing website. Many VR companies post sample videos of their products and/or software options as a "sneak peek" for potential consumers. Using YouTube as a sales channel would essentially expose Universities and academic professionals to Athena VR by showcasing our product for free with ease rather than spending time and money for a sales representative to conduct a formal demo.

Another potential channel for Athena VR is Oculus. Oculus VR is a prominent brand in the technology industry – it is very well-known for specializing in virtual reality hardware and software products. Oculus has established itself as a premium VR brand by analyzing and following the trends of the technology and EdTech industries. Through "relentless innovation" while "maintaining familiar accessibility that anyone can appreciate and understand", Oculus is driven by individuals that fall into the demographics of our target market (Oculus 2019). If we use Oculus as a channel, the big-name brand could potentially pick up Athena VR and bundle our content in each headset they sell. Samsung is an additional company that could also provide Athena VR with this same opportunity. In collaboration with Oculus, Samsung Electronics manufactured a mobile VR headset called Samsung Gear VR. These two channels could present Athena VR with the opportunity to get our content and product into the hands of our target market.

Brand Development & Marketing Communications

The sales and channel plan for our company will highly revolve around sales representatives. Because we want to distribute our product to universities in the United States, we will need to employ sales representatives to travel and pitch our product to the school board members and administrators. The type of salespeople involved in our business will most likely be commissioned product demonstrators. A sales training program will have to be offered to our employees to ensure they are demonstrating the product correctly. To ensure that Athena VR has a competitive retention plan set up for our sales team, we will offer our salespeople an incentive by including payment on commission and bonus payments for commendable success in sales. We aim to sell our product to teachers and school administrators in the education system, and we are aware that the decision-making process in education can be lengthy and challenging. Therefore, specialized salespeople will be employed by our company to assure our target market is receiving the best customer service possible. Our salespeople will have experience selling products, specifically EdTech products, to school districts in the United States.

Our company will build a website to provide potential customers with information about our product. This website will most likely provide tutorials and videos displaying the use of our product in the classroom, which will also be accessible on our YouTube channel. Website traffic and insights will be monitored by our CMO to keep track of which aspects of our advertising plan are working best. In addition to the website, our company will also promote our product through social media platforms. According to a study done by the Pew Research Center, 71% of Americans ages 18 to 24 use Instagram and roughly two-thirds of U.S. adults are Facebook users (Anderson & Smith, 2018). By creating company profiles on several of these platforms, especially Instagram and Facebook, our company will be able to reach both demographics of our personas. According to an article on Media Cause, if you are targeting a young audience, you will find the most success marketing to this demographic on Instagram (Keizer 2018). We will customize our messages on Instagram to specifically target students aged 17-19. These messages will address our product being able to save these students time, stress and money in the future when making college decisions. Many students in high school are concerned about the high cost of student loans that spawn from a college education. By communicating that our product will help mitigate the risk of having excessive student loans through aesthetically pleasing and trendy content on Instagram, our company will catch the attention of our end users. In addition, it will also benefit the Universities, because they will be able to gain more revenue from incoming students. Because two-thirds of U.S. adults are Facebook users, Athena VR will target teachers and parents through marketing communications on that platform. Our messages will differ for this persona by focusing on the educational benefit students will receive by using our product. We will create advertisements on Facebook and analyze the ad performance after each message. Facebook will be a beneficial marketing communication for our company because you are able to customize exactly who you are targeting (age, gender, etc.) and what location your market exists in (zip codes, school districts, etc.). By communicating that our product will bridge the gap for struggling learners, increase educational engagement, and teach students how to apply the current curriculum they are learning to real-world situations, we will be able to catch the attention of these influencers.

Information and statistics about our virtual reality product will also be provided to potential customers through email distribution. Public contact information found on the websites of the high schools we are targeting will provide us with a direct channel of communication to the school administrators. Brochures, pamphlets and service sheets will be provided to high schools as a form of advertising for our product. These forms of advertisement will be distributed through mail delivery service or directly from one of our sales representatives. We will also implement press releases into our marketing plan to spread positive word of mouth about our product. By posting articles and blog excerpts on technological and educational websites such as EdSurge, Medium, and EdTech Magazine, we will be able to increase brand awareness among our key influencers and decision makers. Teachers who are passionate about increasing the learning potential within students are most likely keeping up with the newest innovations and trends in the EdTech industry. The Global Digital Citizen Foundation is another website that provides teachers with resources focused on helping them keep up with technology trends (Wabisabi Learning 2017). If Athena VR eventually adds Oculus or Samsung as a channel, our product will also be promoted in article posts on the blog section of each website.

Because we are a new venture, our team will travel to trade shows and events in the first couple of years of our operations. Our trade show display will include product demonstrations of our virtual reality device so potential investors can test out its various features.

Operations & Technology

Research & Development

The virtual reality market is new and rapidly growing. We are starting off by targeting Universities in Arizona so that we immerse students into the college before they arrive. In order to capture this market, we need to enable a pristine R&D plan to ensure our educational software is ready to be sold. The development of our products is complex. We have a software development side and a production of VR environment. In order to effectively coincide the two, we need engineers with experience in VR technology that know the ins and outs of how a product like this works.

For the development of our product, we need a 360-degree camera, 3D audio, influencers through partners, and a software team that has experience. In the research and development stage it is essential for us to understand what catches the user’s eye, the effects that certain angles will have on the user, and how to strategically place overlays and subtitles so that they don’t take away from the impressiveness of our product.

Since our market research has shown great, untouched potential in connecting the dots between education and the job market, we will use a hybrid methodology in which we have recognized needs gathered through our interviews, surveys and market research. So far, we have identified three major consumer needs: (1) creating products/methods that highlight different aspects of Universities, (2) helping students choose the right area of expertise/passion (3) creating a visual way for students to learn. As explained above in the value proposition, this will all save the Universities over $1,135,000 based on 10,000 students.

Our development process is currently based on three main objectives. We will define multiple milestones with clearly defined objectives for each idea and consumer need. Next, we will create reusable platforms that can easily be transformed to use on other applications in order to reduce costs and improve efficiency. Finally, we will create multiple insertion points in each step of the design process so we can constantly incorporate customer feedback to improve our product, thus reducing long-term risks and increase return on investment.

Technology

Although virtual reality technology is fairly new, a variety of different products have been introduced. Low-range VR sets, such as Google cardboard, generally require the use of smartphone as the main processor. On the other hand, stand-alone, mid-range VR sets are independent of an external device. High-range VR sets require a strong graphics card enabled workstation which is able to process far more detail and sophistication. At first, we want our product to be affordable so we will be using google cardboard. We also will partner with main producers of VR/AR sets down the road to receive a discount on their products and, in return, to use their product as our main accessory.

Production/Manufacturing/Service Development

Like all software companies, we will have to go through multiple versions and subversions to get to a final stable product that would satisfy the needs of our customers. The constant updates/upgrades using our early-adopter feedback will help us get a stable version (1.0) and assist our clients with their desired product.

Suppliers, Logistics, & Distribution

Due to the fast growth of VR/AR technologies and the constant introductions of new gadgets and products, we need to stay up to date and flexible while introducing a product that will easily be extendable to different platforms. Through widely-used content creator software, such as Unity, and standard formats for our final contents, we will make sure to stay on top of the market.

Facilities

In the early years of our startup we want to minimize costs so we will work out of the COO, Toddy McGann's, garage. We will have all the resourced we will need, and rent will be free. Our major needs will be limited to some strong workstations in place and a small location for our business and customer service team. Furthermore, we will take advantage of currently available e-learning facilities such as i-space (or virtualization) to bootstrap through the initial beta steps of our venture.

Management & Ownership

Form of Venture/Ownership

The form of ownership for our company will be designed into an LLC. We chose an LLC because since we are a smaller business and want less tax liability. Some advantages we see as important in being an LLC is how our personal assets, such as our home and bank account, cannot be used to collect business debts. Not only that, it allows us as the management team to have more flexibility when it comes to running our business.

Key Management/Board Members

The management team will include the five founders of the organization. Lauren Radin is the CEO, Tristan Richards is the CMO, Cara Connaghan is the CFO, Toddy McGann is the COO and Artin Majdi is the Engineer/CTO. Our board of directors will include seed investors. We would like to have our seed investors come from either from a technological or educational background. We also seek to attain a couple advisors and/or mentors who have experience in the technology and virtual reality world.

<u>Key Management</u>

Lauren Radin

Lauren Radin is the CEO at Athena Virtual Reality. Her passion for running start-ups has dated back to her pre-professional days with Lauren's Tutoring. Her time as a Protiviti Consultant strengthened her skills with project management and collaboration. Whether as a member of her college Entrepreneurship club or apart of an Eller event, Lauren always found herself in a leadership position - she likes to take action and make recommendations for the good of the organization. Lauren is known for her sharp minds, decisiveness and business acumen.

Artin Majdi

Artin is the CTO of Athena Virtual Reality. His engineering background with hands-on experience in medical technologies and computer vision will enable us to be semi-independent in the early stages of our product development. Artin has extensive experience in software/hardware design from years of academic and industrial experiences. He actively collaborates with clinical experts in a diverse range of applications, enabling him to have a perception of different opportunities that technology can devise in STEM subjects and the healthcare industry.

Toddy McGann

Toddy is the COO of Athena Virtual Reality, his experience in Data Quality and Operations at Goldman Sachs gives him great insight into how a fortune 100 company functions. Toddy has also been on the sales side of technology. He was a Sales Operations intern at Ping Identity. Along with that, Toddy has startup experience. He worked for Altvia Solutions on their Product Management team during a time when the company was completely rebranding. With all of this professional experience, he has always been in leadership roles throughout his high school and college careers. Toddy has a passion for competition and professional services. In college, he was President of Alpha Kappa Psi (professional business fraternity) which prides itself on bettering its members for their future careers. Enabling young people to find their future has always been something he wanted to do.

Cara Connaghan

Cara Connaghan is the CFO of Athena Virtual Reality. Her academic achievements as a finance major, involvement in Investments club, and experience as a Corporate Finance intern at Honeywell International's Headquarters have provided her with the knowledge and experience to facilitate the launch of Athena Virtual Reality from a financial standpoint. In her internship, she learned the importance of cross-functional collaboration, which is a very beneficial skill to have in a startup environment. Her knowledge of Financial Statements and company valuation will help the team with important decision-making milestones through the venture.

Tristan Richards

Tristan Richards is the CMO of Athena Virtual Reality. Her lifelong passion for art sparked her interest in marketing - an area of business where she can fully implement her creative skills. Through her marketing internship at Fox Restaurant Concepts, Tristan gained experience on how to identify the right target market, analyze market analytics, and create strategic documents, such as competitive analyses, market insights, and email designs. Tristan also has experience with graphic design, apparel, and new logo creation through academic, personal, and professional involvement. Her knowledge of strategic marketing will help the Athena VR team target the right persona and ultimately sell the product to the decision makers and end users.

Board Advisors

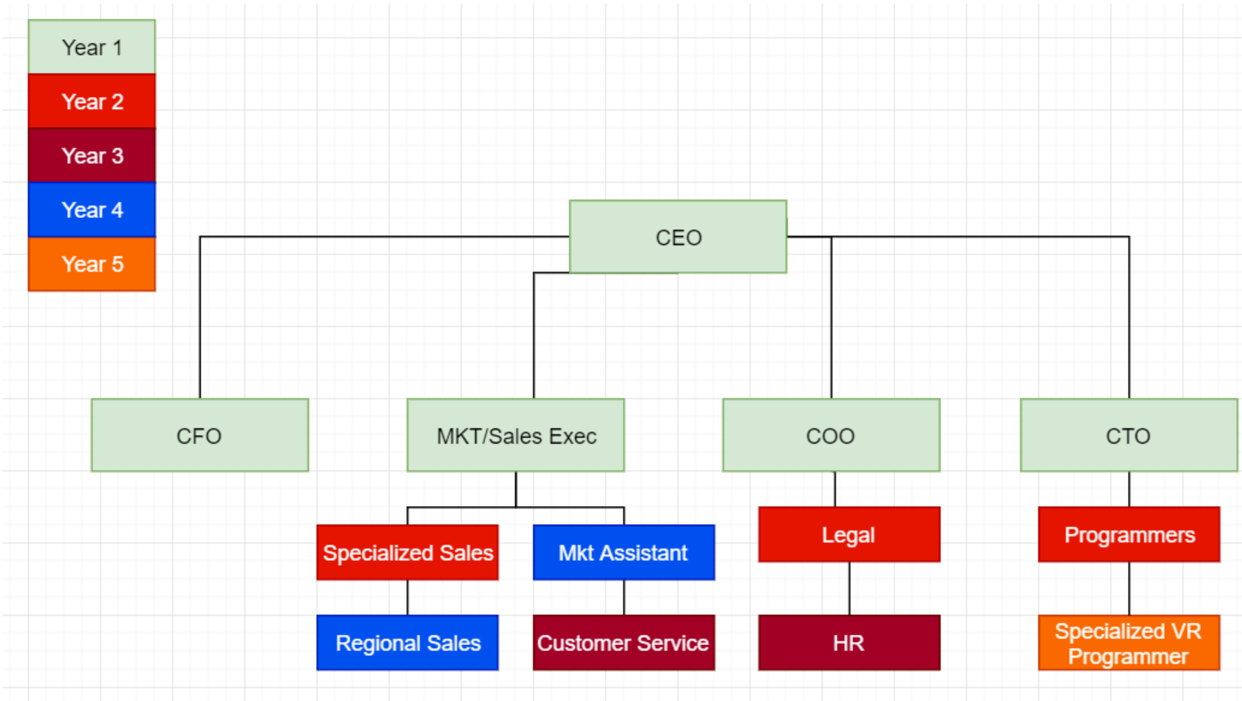
Brian Ellerman

Brian Ellerman will serve as Athena VR's mentor and board advisor. Brian has 15+ years of corporate experience and 3+ years of startup and exit experience. He has worked with service providers in the past by developing software, building databases, and working with analytics. Brian has served on the University of Arizona advisory boards for Eller MIS, BIO5, and Tech Launch Arizona. Seeing that he founded the Tucson STEM Community, Brian will assist Athena VR with his wealth of knowledge about the curriculum and career paths linked to STEM subjects.

Staffing plan

Our team will begin with our original founders as we start off our product. Our staffing plan will grow as we acquire more customers and hit more revenue and sales. One of our main challenges will be the content creation which necessitates the need for constant consultations with different experts in both academia and industry, this constant flow of knowledge input will force us to hire multiple different experts as either part of our advisory board or through temporary consultants. Further with the expansion in the number of gadgets that we're tackling, we will need to hire multiple developers/business consultants and sales representatives.

Organization Chart



Financial Plan

Financial Overview

As we are an educational software company who delivers content through third-party virtual reality hardware, our costs will primarily come from software development. A significant portion of our budget will be dedicated customer acquisition and research and development to create a sophisticated virtual reality product. Our five-year sales forecast outlines our progress for our premium product, but in future years we plan to develop a more simplified version of our product for a larger audience.

Our end users, the students, will turnover quickly in 2-4 years but with a 6-month subscription agreement, our customers, the universities, will continue to subscribe because there will always be new students coming in that have the same needs as prior students. We made an assumption of a 20-year lifetime of the customer. Our product will be based on $10 per student and we are selling to Universities who will use our software to attract students. We will be selling on high volume at a low cost to reach a large market.

Summary Pro Forma Income Statement

As there are about 3 universities we are targeting in Arizona, we think we can capture at least the University of Arizona in the first year by providing 1 year of free demos or condensed versions of our product. We will use this pilot to obtain more validation and establish our brand. Though our market may be difficult to penetrate at first, we believe that customers will remain loyal for many years because of the time and money it will take to adopt our product. We assume an annual churn rate of 5%, which will make the lifetime of the customer 20 years. We have forecasted five years of financial projections that will begin after this demo year. Since our total addressable market is about 3.5 million students, we have projected that by year five it is reasonable to assume that we will sell around 1.5 million subscriptions at a price of $10 every 6 months bringing us to $24 million in revenue. The bulk of our expenses will come from operating expenses paying competitive salaries to our in-house engineers and sales reps. We budget 23% of our revenue to go toward research and development and 25% will go toward marketing and sales, which we have found to be standard for many SaaS startup companies. We will also have to reduce our sales by about 30% for the transaction fee that GooglePlay charges. Net income in year 5 amounts to about $4.6 million. A more detailed view of each of our financial statements is attached in the appendix.

Sources and Uses of Funds

The main source of our funds in the first few years of operating will come from personal funds from our founders, small-business grants, and microloans. We will continuously write up proposals outlining the impact of our research on the welfare of the community in order to receive grants from the government and different organizations. We have come up with $350,000 in founders' investments from our personal funds and from the help of family and friends. This will help cover our startup costs in year zero to get us off the ground.

After researching comparable companies and using a few different valuation methods, we are going forward with a $1.7M pre-valuation of our company which we came up with using a scorecard method and risk factor method. Our main competitors had very successful seed round funding ranging from $500K to $27M so we went with a more conservative valuation to start with. These companies are located in California and the east coast so we understand that we may not be valued as highly initially since we are in Arizona. With a $300,000 seed fund and post valuation of $2M, our investors will obtain a 15% stake in our company. We plan to use these funds to increase R&D for content creation and customer acquisition. Using the venture capital method of valuation, we assumed an exit value of $30 million, based on the standing of our competitors at a similar point in their venture, and a required return of 20%. This will bring us to a post valuation of $6M.

Appendices

a. List of Financial Assumptions

- $10 per semiannual subscription
- Universities will buy subscriptions to send out to high school students for recruitment purposes
- Units sold based on the number of high school seniors in the United States
- 23% of Revenue goes toward r&d
- 25% of revenue goes toward Marketing
- 30% of revenue goes in COGS for transaction fees
- Salaries are based on national averages
- Initial founder investments from family and friends amounting to $350,000
- Loans amounting to $150,000
- Growth rates are highest from year 1-2 because we start small and scale quickly
- Growth rates are high due to the nature of Subscription software business models

b. Pro Forma Income Statement & Financial Models

Financial Performance Metrics

Validity of Forecast (Years)	5				
Year	1	2	3	4	5
Annual Averages					
Gross Margin	50.00%	71.86%	75.64%	76.90%	77.25%
Revenue	$300,000	$1,064,000	$3,231,900	$9,971,010	$24,037,256
Gross Income	$150,000	$764,600	$2,444,723	$7,667,533	$18,568,874
Operating Expenses	$635,991	$1,172,287	$2,712,614	$5,555,456	$11,997,958
Net Income	-$491,032	-$412,037	-$271,041	$1,606,383	$4,578,119

Year Ending	1 Dec-20	2 Dec-21	3 Dec-22	4 Dec-23	5 Dec-24
Projected Income Statements ($s)					
SALES					
Gross Sales	300,000	1,064,000	3,231,900	9,971,010	24,037,256
Returns and Allowances	-	-	-	-	-
NET SALES	300,000	1,064,000	3,231,900	9,971,010	24,037,256
COST OF SALES					
Materials	-	-	-	-	-
Labor (Inc Taxes & Benefits)	60,000	60,000	60,000	60,000	60,000
Other	90,000	239,400	727,178	2,243,477	5,408,383
TOTAL COST OF SALES	150,000	299,400	787,178	2,303,477	5,468,383
GROSS MARGIN	150,000	764,600	2,444,723	7,667,533	18,568,874
OPERATING EXPENSES					
Salaries and wages	435,978	609,636	1,097,976	1,157,976	1,277,976
Payroll taxes	33,352	46,637	83,995	88,585	97,765
Employee benefits	43,598	60,964	109,798	115,798	127,798
Depreciation	2,063	2,250	2,250	2,250	2,250
Bad debt expense	-	-	-	-	-
Additional Operating Expenses	121,000	452,800	1,418,595	4,190,847	10,492,169
TOTAL OPERATING EXPENSES	635,991	1,172,287	2,712,614	5,555,456	11,997,958
OPERATING PROFIT (LOSS) BEFORE INTEREST AND TAXES	(485,991)	(407,687)	(267,891)	2,112,077	6,570,916
INTEREST EXPENSE	(5,042)	(4,350)	(3,150)	(1,950)	(750)
PROFIT (LOSS) BEFORE TAXES	(491,032)	(412,037)	(271,041)	2,110,127	6,570,166
DISTRIBUTION FOR TAXES	-	-	-	(503,744)	(1,992,047)
NET PROFIT (LOSS)	(491,032)	(412,037)	(271,041)	1,606,383	4,578,119
EBITDA	(483,928)	(405,437)	(265,641)	2,114,327	6,573,166

Year Ending	1 Dec-20	2 Dec-21	3 Dec-22	4 Dec-23	5 Dec-24
Projected Balance Sheets ($s)					
ASSETS					
Current Assets					
Cash	(77,328)	(408,401)	(190,977)	1,497,870	8,058,453
Accounts Receivable	-	-	-	-	-
Inventory	-	-	-	-	-
Other	25	25	25	25	25
Total Current Assets	(77,303)	(408,376)	(190,952)	1,497,895	8,058,478
Property and Equipment	20,000	20,000	20,000	20,000	20,000
(less accumulated depreciation)	(2,063)	(4,313)	(6,563)	(8,813)	(11,063)
Net Property and Equipment	17,938	15,688	13,438	11,188	8,938
Other Assets	-	2,786	2,571	2,357	2,143
TOTAL ASSETS	(59,366)	(389,902)	(174,944)	1,511,440	8,069,558
LIABILITIES AND MEMBERS' CAPITAL					
Liabilities					
Current Liabilities					
Accounts Payable	-	1,500	7,500	7,500	7,500
Other Current Payables	-	-	-	-	-
Pre-Existing Debt	-	-	-	-	-
Current Portion of L-T Debt	20,000	20,000	20,000	20,000	1,667
Total Current Liabilities	20,000	21,500	27,500	27,500	9,167
Long-Term Debt	61,667	41,667	21,667	1,667	-
Total Liabilities	81,667	63,167	49,167	29,167	9,167
Members' Capital					
Members' Paid-In Capital	350,000	450,000	950,000	1,050,000	3,050,000
Undistributed Members' Earnings	(491,032)	(903,069)	(1,174,110)	432,273	5,010,392
Less: Members' Interest Repurchased	-	-	-	-	-
Total Members' Capital	(141,032)	(453,069)	(224,110)	1,482,273	8,060,392
TOTAL LIABILITIES AND MEMBERS' CAPITAL	(59,366)	(389,902)	(174,944)	1,511,440	8,069,558

Year Ending	1 Dec-20	2 Dec-21	3 Dec-22	4 Dec-23	5 Dec-24
Projected Cash Flows ($s)					
CASH FLOWS FROM OPERATIONS					
Net income	(491,032)	(412,037)	(271,041)	1,606,383	4,578,119
Adjustments to reconcile net income to cash flows from operations					
Depreciation	2,063	2,250	2,250	2,250	2,250
Changes in certain assets and liabilities					
Accounts receivable	-	-	-	-	-
Inventory	-	-	-	-	-
Other current assets	(25)	-	-	-	-
Accounts payable	-	1,500	6,000	-	-
Other current payables	-	-	-	-	-
Pre-existing debt	-	-	-	-	-
TOTAL CASH FLOWS FROM OPERATIONS	(488,995)	(408,287)	(262,791)	1,608,633	4,580,369
CASH FLOWS FROM INVESTING ACTIVITIES					
Purchase of equipment	(20,000)	-	-	-	-
Other Assets	-	(2,786)	214	214	214
TOTAL CASH FLOWS FROM INVESTING ACTIVITIES	(20,000)	(2,786)	214	214	214
CASH FLOW BEFORE FINANCING	(508,995)	(411,072)	(262,577)	1,608,847	4,580,583
CASH FLOWS FROM FINANCING ACTIVITIES					
Borrowing of long-term debt	100,000	-	-	-	-
Repayment of long-term debt	(18,333)	(20,000)	(20,000)	(20,000)	(20,000)
CASH FLOW BEFORE MEMBERS' CONTRIBUTIONS	(427,328)	(431,072)	(282,577)	1,588,847	4,560,583
Members' Capital Contributions	350,000	100,000	500,000	100,000	2,000,000
Members' Interest Repurchased	-	-	-	-	-
TOTAL CASH FLOWS FROM FINANCING ACTIVITIES	431,667	80,000	480,000	80,000	1,980,000
NET CASH FLOWS	(77,328)	(331,072)	217,423	1,688,847	6,560,583

c. Valuation

Risk Factor Valuation	
Managemtent	-2
Stage of Business	-3
Legislative/political risk	-3
manufacturing risk	3
sales and mkt risk	2
funding/raising capital	1
comp	0
technology	-2
litigation	-2
international risk	1
reputational risk	-3
potential lucrative exit	3
Positive	10
Negative	-15
Median comparable valuation	1,500,000.00

Score Card Valuation				
Factor		Weight	Result	Input
Management		0.25	0.7	0.175
Opportunity		0.3	1.3	0.39
Product		0.2	0.7	0.14
Sales/mkt		0.1	0.8	0.08
Comp		0.15	1.1	0.165
Weighted Avg				0.95
Median	2000000			
Valuation	1,900,000.00			

d. Staffing Plan

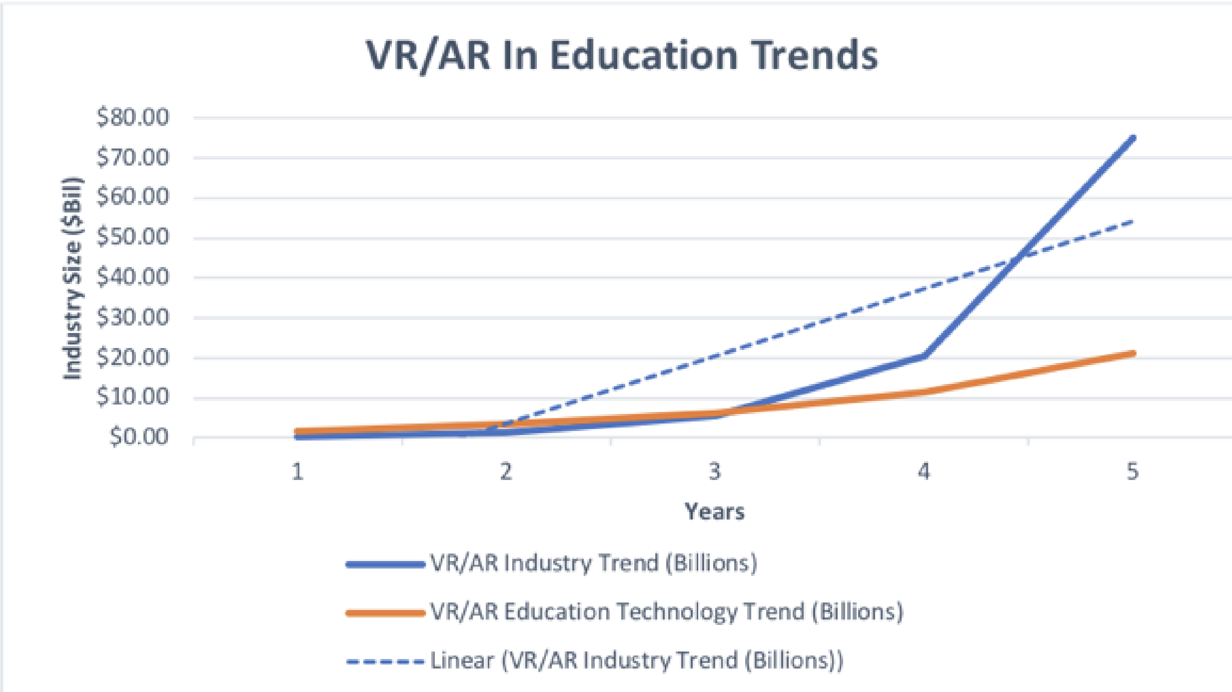
Department		Number of Employees Per Year					
		0	1	2	3	4	5
R&D	CTO/VP Engineer	1	1	1	1	1	1
	Programmer						1
	Tech Writer						1
	Other						1
Total		1	1	1	1	1	4
Sales	VP sales		1	1	1	1	1
	Regional Sales					1	2
	Customer Service					1	2
Total		0	1	1	1	3	5
Marketing	Chief Marketing Officer	1	1	1	1	1	1
	Marketing Assistant				1	1	1
Total		1	1	1	2	2	2
General and Admin	CEO	1	1	1	1	1	1
	CFO	1	1	1	1	1	1
	COO	1	1	1	1	1	1
	Legal			1	1	1	1
	HR					1	1
Total		3	3	4	4	5	5
Company Total		5	6	7	8	11	16

e. Competition

	Nearpod	Unimersiv	STRIVR	zSpace
Overview				
Total Funding Amount	$30.7M	–	$21M	$56.6M
CB Rank (Company)	28,976	89,244	3,182	6,934
Categories	Education, Mobile Apps, Skill Assessment, Virtual Reality	Education, Online Portals, Virtual Reality	Augmented Reality, Corporate Training, Enterprise, Enterprise Software, Information Technology, Software, Sports, Training, Virtual Reality	Education, Innovation Management, Social Impact, STEM Education, Virtual Reality
Headquarters Regions	Greater Miami Area, East Coast, Southern US	San Francisco Bay Area, Silicon Valley, West Coast	San Francisco Bay Area, Silicon Valley, West Coast	San Francisco Bay Area, Silicon Valley, West Coast
Founded Date	2012	Feb 5, 2015	Jan 2015	2007
Founders	Emiliano Abramzon, Felipe Sommer, Guido Kovalskys	Baptiste Greve	Derek Belch, Jeremy Bailenson, Trent Edwards	Paul Kellenberger
Operating Status	Active	Active	Active	Active
Funding Status	Early Stage Venture	Seed	Early Stage Venture	–
Last Funding Type	Series B	Seed	Series A	Venture - Series Unknown
Number of Employees	11-50	1-10	101-250	101-250
Also Known As	–	–	STRIVR Labs	–
Legal Name	Nearpod Inc.	–	STRIVR	zSpace, Inc

Key Dimensions of Competition in the EdTech Industry (Crunchbase 2019)

f. Industry Trends



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