

GOLF PRO SOLUTIONS: EXPLORING INTERNATIONAL BUSINESS
OPPORTUNITIES IN SONORA MEXICO

BY

JAHRON DAVID FRANCIS

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Approved by:

Carlos Alsua
Department of Entrepreneurship

Abstract

The focus of my thesis is on exploring manufacturing opportunities in Mexico that, can be used to benefit Golf Pro Solution. The research for this project was conducted throughout my senior year in the McGuire New Venture Entrepreneurship Program and culminated with a trip to Sonora Mexico. The Initial steps in my thesis required gathering information. This information was gathered in numerous ways including: online research, in class lectures, and field research from our trip to Hermosillo and San Carlos, Mexico.

The online research I conducted revolved around the cultural norms and traditions in Mexico. While in Mexico conducting my field research, I was able to examine, and experience first hand some of the differences in Mexican culture. Resource was also conducted on manufacturing in Mexico. Advantages were examined with respects to the benefits for Golf Pro Solutions.

My thesis also includes information obtained through lectures throughout the semester. These lectures consisted of guest speakers (three in total) whom came to our class to discuss doing business in Mexico. Justin Dutram, Consul General Virginia Stabb, and Laura Provencher. Each of these speakers provided their own unique experience and expertise on the topic of "Doing Business in Sonora".

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Introduction

This thesis was done to partial satisfy the requirement to graduate with honors set forth by the Honors College at the University of Arizona. The focus of this thesis is on Business Opportunities in Mexico for Golf Pro Solutions. Golf Pro Solution is a New Venture start up team that was founded in the Fall of 2019 at the University of Arizona by five students: Jahron Francis, Chase Boiseau, Hamasseh Pourhamzeh, Douglas Taylor, Dillan Thompson.

This team was created at the University of Arizona's Eller College of Managements in the McGuire New Venture Entrepreneurship Program with the purpose of creating an idea and then developing that idea into a product that can be taken to market. This involved developing an business plan and financials forecast for our venture. We also looked in the step's entrepreneurs would take when launching their company.

The company we developed is called "Golf Pro Solutions". Golf Pro Solution is a GPS golf ball company that allows it users to track key statistic like; ball rotation, distance, and lie on the course. These statistics can then be downloaded later to a computer for further evaluation. This product will allow our customers to diagnosis the issues they had during their round and will give them a modern approach to bettering their golf game.

For the Honors portion of the program we looked at the possibility of manufacturing in Mexico. The first portion of this research was done in the class room and involve online and library research. As well as lectures. The second part of my

research involved actually going to Mexico to study how manufacturing is done across the border.

Background Research

Mexico (or the United Mexican States) is made up of 31 states and a single federal district. With a population of roughly 123 million people and an estimated gross domestic product of 2.2 trillion dollars Mexico is a huge economic power in the world and is steadily growing. This economic growth has created tremendous business opportunities. Initiatives like the North American Free Trade Agreement (NAFTA) makes owning and operating a business in Mexico straight forward. In my research one major advantage of doing business in Mexico is, you do not have to be a resident (nor travel to Mexico) to open a business. Only a couple of industries, like gas and oil are highly restricted making registering a business in Mexico very easy. According to The World Bank and International Finance Corporation (IFC), Mexico is currently ranked 36th in the world for ease of starting a business.

When doing business in Mexico, there are some important aspects of the culture that really stand out and that are quite different then in the United States. Most notably Mexican people tends to be warmer and more welcoming then their counterparts in the United States. This is immediately evident in the difference in personal space. Hispanic people tend to stand at a considerably closer distance and tend to put less emphasize on an individual's personal space. This distance can be up to three to four inches closure in proximity then we are used to in the United States. This may seem a little strange at first, but this is perfectly normal behavior in Mexican culture. Handshakes also tend to last longer and can include more touching. Mexicans are just more open to casual forms of physical contact. It is not uncommon for two hands to be used. One to shake and the other placed on the arm or shoulder. All normal ways of greeting in Mexican culture.

Another common greeting is for people to kiss on the cheek each other on cheek when meeting. These customs may seem strange however, these greetings are very important in building and solidify bonds. Cultivating relationships in Mexican culture is hugely important. Most deals extend beyond just the deal and the contract. Trust and respect are highly valued. Verbal agreement are expected to honor as if they were a written contract. It is because of this, establishing good relationships as a precursor to doing business is so important. It is common practice for a business partner to invite you over to their house on the weekend and introduce you to their family to get to know you better. Mexicans like to do business with the person and not the corporations.

In the household the hierarchy is very clear, with the eldest male most likely to be the head of the household. In family run businesses, the key decisions are also made by the head of the household. In this culture the word family extends beyond who American would consider family. It includes also include other entities like godparents and close family friends. These family ties are treated just as important as their primary family. Nepotism then is not only accepted but encouraged in Mexico. With most Mexicans identifying themselves as a member of a family. Taking a great deal of interest in increasing their clans' reputation and standing in the community.

Religion also plays a huge part in Mexican culture and Mexico is widely a Christian country. This importance on religion can be found in every aspect of Mexican life. It is common practice to have a priest bless new corporate areas. Additionally, it is not uncommon to see religious idolatry or imagery in the workplace.

When you have set a meeting for a future date, it is totally acceptable plus it shows interest if you confirm your appointments several time as the date approaches. However, you should avoid planning meetings during Christmas vacation as this time of

the year is normally reserved for family. On the same note, national holidays should be avoided as these tend to be extended family weekends as well. When the meeting has finally arrived do not be surprised if the person you are meeting shows up late. Mexicans tend to be late for meeting more so than Americans. For them it is not a sign of disrespect, it is just part of the cultural emphasis on personal life.

Americans tend to want to hurry and get down to business as soon as possible where in Mexican culture, Mexicans like to take the time to get to know the person they will be doing business with. This getting to know someone requires creating a relationship and establishing a level of trust. Further you may find that Mexicans are less direct when it comes to answering questions or making decisions regarding business. It is not abnormal for people to say “they will get back to you” with no intentions of closing the deal and not insulting you.

Keep in mind lunch breaks in Mexico can take longer than in the United States as well. These breaks typically range from one hour for normal workers to three-hour work lunches for executives. Also, the typical work day can extend to seven at night. Mexicans tend to do business in person and with friends, if they begin to feel uneasy around you, chances are they will not do business with you. You should avoid refusing drinks offered to you at meetings. This can be viewed as rude or even disrespectful.

Mexicans love to small talk about their country and what aspect of their country (or culture) you have enjoyed. This is a normal part of doing business, you should engage these questions with aspects of the country or culture you have really enjoyed. Some good things to talk about would include: places you visited, food you have tried, experiences you have been exposed to, and what about the country you really like. Speaking Spanish or at least using common terms goes a long way in Mexico. This

shows to your host that you genuinely interested in their culture and country. With that said, there are some topics you should avoid discussing for instance: poverty, immigration, and any other unpleasant topic that could be offensive. Try to keep your conversation light and cheerful.

As for proper attire. When it comes to dressing for your meeting, you are expected to dress conservatively and professional. During the meetings it is essential to be polite and maintain good posture. Slouching is looked at as a sign of disrespect and boredom. Pointing at someone can be viewed as disrespectful. You should also avoid staring for long periods of time, extended eye contact is view as impolite.

There are quite a few advantages to doing business in Mexico and this explains why Mexico's economy is growing at such a tremendous rate. For instance, reduced costs are one of the immediate advantages of manufacturing in Mexico. The cost of labor south of the border is dramatically cheaper than in the United States. This holds true for industries that rely heavily on migrant Mexican labor, even in these situation labors is still cheaper in Mexico.

One misconception is that only menial task like manufacturing can be done in Mexico and Mexican workers are not to the United States' standard. It is true that much of the immigrant Mexican work force in the United States is unskilled. This idea is completely wrong, Mexico has an abundance of skilled laborers. Inside Mexico, there is a huge number of highly skilled workers, especially in the STEM fields. One other consideration to look at within Mexico is, workers with uncertain legal status are not an issue. The potential cost saving in Mexico are huge. Environmental and safety regulations are much friendlier to businesses then in the United States.

With all the positives with doing business in Mexico, there are some things that you should be aware of before doing business in Mexico. Corruption and bribery are prevalent in this country and established businesses sometimes must pay bribes. The reasons can range from keeping police from bothering them to speeding up official procedures. This is just one aspect of the culture and is just a very tiny part. It is worth mentioning because even though these practices might be common place in Mexico, business people in America are still forbidden by United States laws from acting in similar ways.

Something else to be cautious of is criminality. Mexico is having a problem with violence due to drug traffickers and other paramilitary criminal operations. Certain regions like, Chihuahua or Sinaloa, the violence can be so bad that these states have reached the failed-state levels. However, these are regionalized issue and most parts of Mexico are quite safe.

Lastly is political uncertainty. Due to the current political climate between Mexico and the United States, businesses that might be considering manufacturing in Mexico, face considerable uncertainties in terms of taxes and tariffs. Since these implications are currently unforeseeable they create a high-risk situation where businesses and investors need to carefully consider the advantages and disadvantages of doing business in Mexico given the current situation.

Keep in mind certain areas of the United States are not perfect. Violence, corruption, political uncertainty and criminal behavior exist everywhere in the world. The booming industries, growing economy, and relaxed regulations make Mexico an excellent choice for businesses. Add in the rich culture, the warm people, the great

business opportunities, and it's easy to see that Mexico is worth considering for business ventures.

Guest Speaker Justin Dutram

The first of our three in class lecturers was Justin Dutram the Director of Business Development for Tech Parks Arizona. Justin came to our class on January 31, 2019 to give a talk on the topic of “Doing business across the border in Mexico.” In his lecture, Mr. Dutram spoke on different aspects pertaining to doing business internationally in Mexico.

The main thing I learned from this discussion was, Mexico is Arizona’s number one trading partner. Primarily because of the \$21 billion in legitimate commerce between the two each year. With Mexico being the 15th largest country and having an estimated population of around 120 million people, this makes doing business with our neighbor to the south very beneficial. Mr. Dutram also discussed how trade with Mexico plays a huge part in Americans everyday life. One example is most of the produce in the United States that we eat during the winter months. Mr. Dutram explained how most of this comes from Mexico and Latin America. In Nogales right across the border there are massive warehouses of fresh fruits and vegetables. Mr. Dutram mentioned this industry is continuing to experience growth and this growth has led to some tremendous business opportunities in Mexico.

Mr. Dutram also talked about how cross border industry’s affect Arizona. Shifting his talk to climate change and the water issues between the two countries Mr. Dutram discussed an example of the agreement between the United States and Mexico to allocate the water from the Colorado river. The discussion centered around the idea that that the US has mostly used up its water rights and Mexico has claim to much of the remaining water in the river. Mr. Dutram also discussed the agreement between the two

where Mexico would not remove the remaining water from the river. This was a very interesting topic about something so simple river water. However, it wasn't just so simple in this situation the river water was being traded like a commodity between the two nations.

Also, on the topic of cross border industry Mr. Dutram discussed the University of Arizona's mirrors and astronomical programs. As I enjoy astronomy myself I was quite interested to learn about some of major things going on in southern Arizona and Mexico. One of the most interesting things I learned was Vector is trying to build a space port in San Carlos to launch rockets. Mr. Dutram not only talked about the space projects that were going on in this area, but he also put emphasis on the some of the medical research projects going on in Mexico.

When speaking about the medical research projects Mr. Dutram made note that Mexico was developing big break through's in both the Zika Virus and Diabetes. When he talked about the Mexican health care advancements he also discussed how the standards of health care in Mexico were equally to the United States in terms of quality, at a fraction of the cost.

After discussing the medical system Mr. Dutram began to speak about his works with the University of Arizona to take advantage of some of the opportunity across the border. He mentioned that Senora Mexico was the number one state in Mexico for mining. He also mentioned that the University of Arizona does research into mining and that the university works with the mining industries to come up with better more environmentally friendly ways of extracting ore.

Eventually the conversation shifted to the topic of common practices for doing business in Mexico. Mr. Dutram first recommendation? Overcoming bias, assumptions,

and stereo types. Mr. Dutram spoke about how as American we might believe that in a country like Mexico manufacturing is primitive and behind us in terms of sophistication and atomization. In fact, in his discussion he gave numerous examples of the opposite like Mexico's very modern and highly technologically manufacturing facilities, the quality of medical care and research, and the intelligence of Mexican scientist and computer programmers. All this paint the picture of a highly technical highly sophisticated country with a tremendous amount of resources at considerably lower prices.

Next was the importance of building relationship in Mexico and how this might be different in Mexican culture. Some of the major take away from this section were: relationships building happens over time, people do business with you and not the corporation, and people genuinely want to get to know you. It is not uncommon to be invited over to someone home to see how you interact with their family. In the Mexican culture hosting someone it is not taken lightly. The host normally goes to great lengths to be a gracious host. In some of his example he detailed how gifts are normally exchanged, the care in sourcing ingredients for the meal, and having the right amount of alcoholic refreshments to not only serve the people invited but also any others who might show up.

In Mexican culture, family is extremely important, and our lecturer discussed a few of these things like showing respect by using appropriate titles and the importance of respecting the hierarchy of the family (normally the eldest male).

When the topic of communication was discussed it was made apparent that email is less popular in Mexico then in the United States. In Mexico for business people then to use WhatsApp most frequently. With Mexican people being more verbally oriented.

The last part of Mr. Dutram talks revolved around the idea of Mexican culture accepting and embarrassing their failures. Mr. Dutram went on to mention that there were places people get together at during the night where entrepreneurs share their stories of failure. This was insightful because it is quite different than the American culture of keep your failures to yourself in the fear of being judge by them.

Mr. Dutram shared a tremendous amount of knowledge with us regarding doing business across the border and some major cultural aspect as well customs to be aware of. His knowledge and expertise in cross border business were evident.

Guest Speaker Consul General Virginia Staab

On February 7th, Consul General Virginia Staab was the second speaker to talk to our class. She gave a presentation on the different aspects of culture in Mexico. Virginia Staab is a career diplomat who works for department of state. Her territory stretches all Northern Sonora, Mexico. In this territory she has maximum authority when the ambassador is out. The US ambassador report directly to the president on matters of concern between the two countries.

Some of the projects Consul General Virginia Staab oversees involve developing different economic and cultural programs. Some of these programs include; developing trade, working on exchange programs, and helping to build more women entrepreneurs. To accomplish this, she uses funds donated by the US government to help build these programs.

Consul General Virginia Staab has a tremendous amount of diplomatic experience. She joined the state department shortly after September 11th when she found herself stranded Manila after the attack on the twin towers. She watched the attacks unfold on TV and had flight home to be canceled. This experience had a huge impact on her. "We can have differences, but we need to respect each other's opinion".

Her first job in the State Department had her posted in Bogotá, Columbia as the staff aid in charge of proof of life. From here she moved to her next posting in England where she was tasked with interviewing terrorists. Once she was left England she was moved to Washington DC until she was stationed in Haiti after the big earthquake. After her work in Haiti concluded she was on to Portugal where she assumed the role of Public Affairs Officer. Eventually, she ended up looking for illegal drugs and immigrants

trying to cross the US border. Currently she is the Consulate General of Northern Mexico.

Consul General Virginia Staab stated that she always wanted to be a lawyer and in pursuit of this goal she attended Stanford Law School. This background in law has helped prepare her for her current role in Northern Sonora. During her presentation Consul General Virginia Staab remarked that as a diplomat you need to understand the culture and the language in the country you are doing business in order to promote your goals or initiatives. For the Consul General she has 3 goals:

To protect American and interests abroad. With this goal, she sees that Americans are treated fairly under foreign laws. She also helps deal with economic issues like American property trusts expiring.

Security. Consul General Virginia Staab is actively trying to help find a balance between improving security and increasing the efficiency of trade. With billions of dollars in goods crossing the border each day and millions of people crossing, different states find themselves competing with one another for this border traffic. There is also concern about what type of imports can cross the border. For instance, certain fruits and vegetables are not allowed to cross between the countries.

The last goal Consul General Virginia Staab mentioned revolved around ethical issues when doing business in another country. One major issue she discusses was the ethical treatment of pigs being imported to the United States. She estimated that approximately 50,000 pigs die in trucks being transported to the United States. Many of these incidents happened at border crossings where trucks can sit in the hot desert sun for hours. She also estimated that roughly 9.2 billion dollars in commerce passed through her point of entry last year.

The topic of check points was a major part of her discussion. She noted that checkpoints help to fight the war on drugs and that weapons coming south help to create a lot of the instability in Mexico. She also spoke briefly on a few of the different political parties like; PRI, PAN, and Moreno. Mentioning that the Moreno party is now in current ruling party.

She also mentioned that a certain border crossing entry was owned by an influential politician. However, she mentioned the laws in Mexico are slightly different and that this politician had this business owned under concessioner (or legal representative) and not under his name. She also mentioned that this was a common practice in Mexico and for this reason that in Mexico you may not always know who you are doing business with.

When delays at border crossing arise, commercial transports normally go to the port of entry that they can cross the fastest or cheapest, like Mariposa. Knowing the impact this can have on trade Consul General Virginia Staab is trying to help get the check point moved from the US side, to the Mexican side of the border with the hopes of restricting the guns and cash coming into Mexico and relieving the strain on the borders. She believes this will hopefully speed up commercial crossings.

One major issue with the process as its sits right now is, trucks can be searched up to five times entering the United States. This process can also take over forty minutes. The proposed solution would require investing in a less intrusive inspection process. Trucks would roll at around five miles per hour and would then be scanned using new electronic equipment. Consul General Virginia Staab remarked that with this approach security is better, commerce is better, and protecting our nation gets better.

She then spoke for a while on another goal of hers, building the abilities of entrepreneurs. Consul General Virginia Staab referred to Hermosillo as the hub of Sonora. Their new president she says is creating tax benefits and is looking to raise minimum wage. However, this growth was not necessarily do to the government but do to the proximity to the United States, she remarked. Mentioning that there has historically been a huge divide between the state and federal government.

With northern border towns not seeing much assistance from the southern central government. She estimated that 40,000 people live on the north side of the border in Nogales. These people are primarily dependent on cross border trade. Where the south side of the border has roughly ½ million people and due to the increase in manufacturing.

Another project she put together was a craft beer expo in Mexico. In this expo manufacturers from both countries got together to discuss the beer industry. One of the notables take away from this exchange was a unique finding, materials used in the manufacturing process of beers can cross the border up to 5 or more times throughout the beer making process. When it came to the American manufacturers she remarked “What Americans do well, they sell things to others”.

The topic of the border wall came up and Consul General Virginia Staab mentioned that under her role as a diplomat she works for the president. With that said she began describing how borders crossing checkpoints are not where 95% of the drugs and illegal immigrants cross. Some of the major avenues for these kinds of activities are water run off tunnels from the United States. Mexican drug dealers dig holes in the floors of business or homes on the Mexico side. They then cut into these existing water tunnels

to run drugs under the border. For this reason, a mayor in Mexico has said he feels the razor wire lining the top of the border walls is cruel and only discourages business.

Once she had concluded talking about the border wall Consul General Virginia Staab, stated part of her job is having the opportunity to inform people of things they might be wrong on (like the border walls and drugs). Mentioning if the ports in America were somehow closed, it is America that would hurt the most from that sort of situation.

When asked how the government shutdown affected her, she remarked that because of the government shutdown she had to withdraw money from her children's college fund. "The government shutdown is a failure of the entire government, republicans and democrats. Government officials are elected to find compromises and make things work" She also mentioned that because of the shutdown there were border patrol agents that had to go to the food banks in Nogales to make ends meet. "Our government needs to do better" she remarked.

A student in the class then asked about the safety of students traveling to Mexico. One of the first tips she mentioned was, students should enroll in the governments STEP program. This program enters travelers leaving the United States into a database that can be used to keep track and or contact students while overseas. When discussing the actual safety of Mexico, she told the story about living there with her kids. Mentioning that she and her kids ride around their neighborhood on their bikes with little to no fear of violence. She also remarked that just like any other place in the world Mexico has some areas that are more violent than others. However, with that said she compared Hermosillo to Tucson in that there is place in Tucson she doesn't go after dark.

Consul General Virginia Staab gave a very honest look into the Mexico and the culture of doing business in this country. I found her discussion to be very informative.

Guest Speaker Laura Provencher

On Thursday February 14th, Laura Provencher the Associate Director of Global Resiliency at the University of Arizona, came to our class to give a discussion on “Travel Safety”. Her objective was to share travel safety best practices and help us identify and address immediate risks.

Class Concerns

Her lecture started out with Laura asking the class, what we thought the top safety concerns were with traveling to Mexico. The class answers ranged from crimes like abduction and pick pocketing. To health concerns like clean water and diseases.

Travel Planning

Laura then discussed the importance of travel planning and “not just going with the flow”. She mentioned that when traveling abroad you must use common sense and always think things through. Just because you are in another country doesn’t mean just always following what other people say. If you have a bad feeling. You must use your better judgement and if a situation doesn’t feel right, you must act accordingly and take steps to get out of the situation.

Research Your Destination

Part of travel planning is researching your destination. Laura provided several resources to the class that could be used to research foreign countries before traveling. She noted that you should not only use resources provided by your own country but

broaden your search to include resources from other countries. Some of the websites she provided included; The US department of State, The British Foreign Office, The Australian Smart Traveler and Canadian Travel Advice.

Lodging

Laura then spoke on a few tips for lodging in a foreign country. Mentioned was the importance of using a safe if one is provided for you in your hotel room. However, she stated that there are people who can get in the safe if you lock yourself out, so they are not always 100% safe. Also, when you're in your room make sure to use the locks on the doors. In addition, you should also check the fire exits to make sure they were accessible. Lastly you should not drink or brush your teeth with the tap water.

Knowing Yourself

The next point Laura made was knowing about yourself. She started out discussing that knowing yourself starts with identifying your vulnerabilities. How certain things like being on your phone can be hazardous for numerous reasons. One reason is it is a distraction. Looking at your phone should be last thing you're doing when traveling to another country. You really should be enjoying the sights and paying attention to your surroundings. Another hazard is posting pictures on social media while away. This could lead to someone breaking into you home while you are not home. Laura suggested that you refrain from posting pictures of yourself until you have returned home from your trip.

When the topic of health concerns came up she mentioned, you should inform Carlos before hand if you need any special accommodations as they will not prevent you from coming on the trip. However, this will allow for accommodations to be made for you if needed.

Frequent Travelers

For frequent travelers Laura noted that complacency (being too comfortable) can be one of the biggest mistakes that one can make. Even though someone may have traveled to a destination before, they must still exercise caution. Another medical consideration to be mindful of is knowing your risk factors. Laura mentioned several resources like The Center for Disease Control (CDC) and The World Health Organization (WHO) as places to find information regarding the risks associated with different countries. She also talked about being current on immunizations and the importance of having health insurance. Also, when traveling with medicine you should; you should carry extra medicine in case you are away from home longer than expected. You should also keep this medicine in the original container to aid in identifying at border crossings. Knowing the generic and real name of medication is important because generics named medicine is sometimes more common. Lastly if possible you should have your prescription translated into the country language you're going to be in.

Have a Plan

Laura mentioned that you should also be prepared for when things don't go as planned and when this happens you should have a backup plan. In fact, you should have several plans. Also know your resources and if something should happen who you should go to and what help they can provide. She stressed that if something happens to someone it is better to share and get help then wait and allow the situation to possibly get worse. Laura mentioned that if something like sexual assault were to occur Carlos can give you the resources you need to handle the situation at the time and when you return home. She emphasized the importance of not feeling embarrassed and that if a situation did occur only a small number of people will be involved throughout the process.

Money

When the topic of money came up Laura mentioned, that if you are going to use a credit card while traveling in a different country, you will need to let the credit card come know before hand as they will more than likely not allow the transaction, if not informed. As a safety precaution Laura told the class not to carry your wallet in your back pocket and if possible have a “throw away wallet.” She described this as a second wallet with a few bucks in it and some dummy credit cards that can easily be given to a would-be mugger in the event you are mugged. She also mentioned holding you cash and cards in multiple place in case one is lost or stolen.

Checklists

The last topic Laura mentioned was the importance of having a checklist. Some things to consider were updating emergency contact numbers, registering on the STEP website, making sure you have gone over medication, and lastly making sure your passport is in order.

Laura gave great advice during her talk and provided numerus valuable resources that we could have been use in the event an incident might occur. After her discussion I feel more confident now that before that if something should occur I would know what to do. I also learned quite a bit about the importance of being alert and aware of my surrounding.

Business Opportunities in Sonora-Arizona

On Thursday February 21st, the new venture honors class departed to Hermosillo, Mexico for the weekend to study business opportunities in Mexico. Our chaperone and honors professor, Carlos Alsua prepared an expansive trip for us to highlight different aspects of Mexican business culture.

Our trip began Thursday morning with the students who would attend arriving at Eller at 10:30 a.m. to board our buses bound for Mexico. The first leg of our trip was to travel from Eller to the US side of the Mexican border. At the border we all disembarked from our buses to exchange our money on the US side of the border as the rates were better. The current exchange rate on this day was roughly eighteen Peso to one US dollar. After I exchanged my money I took the opportunity to walk to the convenience store to acquire snacks for our journey. I believed it would take quite a bit of time to reach our destination.

After all of us had the opportunity to exchange our money we again boarded our buses to continue down the road into Mexico. We arrived at the border crossing where we crossed over into Mexico effortlessly. I found the ease of crossing the border to be the first surprise along our trip. For me I was expecting a longer hold time to cross the border including stop and searches. However, to my surprise crossing into Mexico was straight forward and didn't take much time at all. I eventually asked someone as to why it was so easy to cross the border going south? The answer I was given was, the border enforcement agents were not to concerned with traffic going south. They were mostly concerned with traffic heading north. This was do to the drug trade and the focus at the border on stopping contraband and illegal immigrants from flowing north.

Once we made it through the check point we drove on the freeway for a little while longer until we stopped at the Instituto Nacional de Migración. Here we went into a little office and met with an immigration agent where we obtained our travel documents (Forma Migratoria Multiple) for our trip. This took a little while. We had a pretty big group and each person had to walk up and get their papers stamped. After everyone was legal to be in Mexico, we again re-boarded our busses and continued down the road.

We eventually arrived in Hermosillo at our hotel The Fiesta Americana. We quickly checked in and headed to our rooms to freshen up for the first evenings activities. Carlos had planned a welcome dinner for us at Resterante Calfante, a high-end Argentinian steak house. This is where we first met the students from the Tecnológico de Monterrey. This first dinner in Hermosillo was very representational of our whole trip. We were treated so well, and everything was top notch the whole trip. From the food, to the activities, to the people. Everything was well planned and thought out to give the students the best experience possible. However, on the first night we noticed some different cultural norms. This became evident after our dinner at Resterante Calfante when, some of the student who choose to have refreshments, forgot to leave an appropriate tip for their server. This led to our waiter coming up to our group a little irritated do to our lack of courtesy. This made for a very tense few moments as students scrambled to collect enough money for his tip. As this situation continued to play out the students were a little hesitant to pay their fair share, this resulted in quite a bit of embarrassment to say the least. This became our first teaching moment and Carlos educated us on the proper etiquette for these types of situations. After dinner we departed back to our hotel and ended our first night in Hermosillo.

The next morning, we woke up early and ate breakfast at the hotel before we boarded our buses to depart to Tec de Monterrey. As we arrived at the Tec de

Monterrey, we were greeted by our host once again. We were supposed to tour the campus this day, but the weather was not in our favor. It had been raining and the decision had been made to not tour campus. Instead we were given refreshments and we began the entrepreneurship part of our event. This part had a panel of key note speakers from different area of Hermosillo's entrepreneurship sector. After the key note speakers introduced themselves and spoke for a bit, the students had opportunities to ask questions of the panelists. Once the Q & A was concluded, some of the students partook in a mini entrepreneurship pitch competition where they had the opportunity to pitch their idea to the key note speakers and receive feedback. This part seemed very beneficial to the teams that pitched.

After the key note speaker section of our visit we transitioned into lunch. Again, the food was excellent. However, during lunch we were treated to an additional treat, a monologue by one of the students from the Tec de Monterrey. His monologue was phenomenal and blew me away. His passion, performance, and message were all so relevant today and his performance really resonated with me.

After lunch was concluded, we began our departure from the Tec de Monterrey and headed to our next destination to visit the manufacturing facility for Hermosillo's number one coffee supplier Caffenio. We arrived at Caffenio and it was still raining. However, it wasn't long before we were in the manufacturing facility embarking on our tour. We got to see the where they stored their raw supplies. We saw where they roasted the coffee and we learned about the different roasting times for different types of coffees. Eventually we were taken to their machine research area, where they tested and developed different machines for use in their coffee shops and convenience stores. At this point we were offered samples of their different products to try for ourselves. I am not really a coffee drinker, so I personally did not partake. However, many other students

did, and I was told the coffee was “excellent”. Once this part of our tour was over, we said our good byes to our host and headed back to our hotel to prepare for dinner.

For dinner we walked from our hotel a few blocks with Carlos and was treated to a very nice Thai Fusion restaurant. We were seated, and Carlos asked how we would like to order? Individually or family style? We choose family style. This was a great decision because they immediately started to bring out different dishes for the table to share. Everyone got to try a lot of different dishes. The food was excellent, and all the dishes have great flavor and a unique taste. I personally love Thai food but have never really had any quite like this before. I was thoroughly pleased. After dinner we walked back to our hotel and had finished our second day in Hermosillo.

On our third day we again awoke early to enjoy breakfast before we depart to the next city on our trip, San Carlos. Once we arrived in San Carlos we went directly to the maquilas at Tatakawi and were greeted by our host. He joined our travel bus and we drove around the complex as he pointed out different company that contract their manufacturing to their facility. Companies like: Boeing, Rolls Royce, and GE all had operations at this complex. All these high-tech company that rely on quality (the airline industry specifically) have and do manufacture a lot of their component in this country to very high standards. After we drove around the complex we disembarked our bus and entered one of the building. In here we were shown to a classroom type area where our host explained what his company did. Our host explained how his company offers the info structure for foreign business to manufacture products in Mexico without having to deal with all the legislation, labor issue, or location searches. Their business model consists of sending them your building specs and your machinery and they take care of the rest. It was an interesting business model and I see the benefits to the foreign businesses looking to do business in Mexico.

Once we concluded our time at the maquilas we headed out to our lunch destination, an ocean side seafood restaurant. This restaurant had an excellent view, food, and overall atmosphere. We began to see the full beauty of Mexico. We had a lovely local playing his guitar and singing in the background as we enjoyed our meal. This was a very memorable experience.

After lunch we headed to our accommodation in San Carlos to freshen up before our next activity. Our hotel, The Hotel San Carlos Plaza was located right on the beach and the view was amazing. We only had a brief amount of time to check in and change before we had to depart again. After freshening up we headed to a nearby beach to participate in a leadership activity hosted by local college students from the area. This activity was very fun and ended up as a girls against guys friendly competition. As painful as it is to say, the ladies were triumphant in this test of teamwork. After our friendly competition our host pointed out that we should take the time to enjoy the sunset, as it was said to be “one of the most beautiful sunsets in the world”. I can only say that, that was an understatement. Words cannot explain the beauty of an ocean side sunset on the mountains. Sitting on the beach in San Carlos is like being in the post card picture. It is that beautiful.

Our leadership activity had concluded, and it was time for dinner. Our host had arranged for us to attend a “Carne Asada” or traditional Mexican BBQ. We departed from the beach and headed to the host house where they had already begun preparing food for us. They made the best Carne Asada tacos I’ve ever had. One I believe this is because everything is better in its country of origin but also because this part of Mexico was known for high-quality beef. This showed in the tacos we ate while on our trip. We ate very well this night and our hosts were so gracious. It highlighted another interesting aspect of Mexican culture I observed on our trip, hospitality. Our host showed us the

best time and were so hospitable. Leaving the event, I had to sit back and contemplate this idea. In the US we are hospitable also. However, I feel our host just took it a step further. After we were done eating, we had some great conversation. We even got to hear our host sing. After some time had passed, our group departed back to our hotel to end our third night in Mexico.

Sunday was to be our leisure day and Carlos had arranged for a boat to take us out to experience the Sea of Cortez for hand. So, we checked out of our hotel and headed to the docks where our boat was waiting. While on our cruise I had the pleasure to try my hand at fishing in the big ocean. I believe there is a saying "They call it fishing and not catching for a reason". This was true in my case but none the less I had a great time. During our time on the ocean the captain called everyone to look ahead of the boat at a school of dolphin. The dolphin seemed to be curious of us and put on a show. The dolphins were so close. They were just splashing around. Jumping out of the water. Some of the students decided to take full advantage of this opportunity and jumped right in to swim with them. Soon we were back underway, and I was fishing again. I am still in awe over the beauty. I still smile when I think about it. It was so much fun. After cruising around the Sea of Cortez for a little while longer the captain again called the students together to view a nearby cave. All the students gathered around and used this opportunity to take a great group photo. Once we had concluded our photos, we began our journey back to the dock. As we returned to the docks the group split up to eat at different local seaside restaurants. After our bellies were full we jumped back on our busses and headed to a local lookout point where students were able to take some awesome photos with the ocean and mountains as a back drop. I took full advantage and got some great photos that will preserve this trip for a lifetime.

Soon after we were back on our buses heading back to Hermosillo, to wrap up the last few activities of our trip. We arrived in Hermosillo after traveling for a little while and checked back into the Fiesta Americana. We hurried and changed as Carlos had arranged an outing to a local start up from the area. We all departed the hotel and arrived at the central plaza in Hermosillo. After a short walk and a brief tour of the area, we arrived at the startup office overlooking the plaza. This startup has built a business using drones to survey different agricultural farms and deliver reports to the owner based on the data they recovered. These reports included such things like potential yields, size of crops, and areas affected by different problems (like disease, droughts, and bad weather). This company's ideas are very innovative, and I realized that Mexican entrepreneurs are not only tech savvy and think outside the box, but they reinvent the box and find solutions others didn't even consider. Leaving this startup, I was amazed at how innovative this idea was and how many other applications it had.

Once we left the startup, we met up with our hosts again for a farewell dinner. This was at a local taco shop, owned by the father of one of the students. I followed his suggestion and tried a Carne Asada taco made from high-quality steak and they were out of this world. The food in Mexico was so flavorful and fresh it made every single meal a pure enjoyment. I've always loved Mexican food but experiencing it in Mexico, there is no comparison. After we said our good byes to our host for such an amazing trip we departed back to our hotel to end the night.

We woke up bright and early Monday morning to eat breakfast and begin our journey home. On the bus ride back, I started to review the past few days I had spent in Mexico in my mind. I began to recall some significant moments and ideas that really resonated with me.

First the people were so nice. Even when not at school function (like just walking around the hotel) people were very nice. They smiled and greet you when you walked by. It was a very warm feeling. In contrast (and this is not everywhere) I feel American culture is just more stand offish and sometimes our culture just feels more isolated.

Another aspect I reflected on, was my misconception regarding the manufacturing that takes place in Mexico. I used to think of made in Mexico to mean clothing or souvenirs. What I soon realized was, Mexico is far more advanced than I ever imagined. Many big American firms are already taking advantage of this. I had to face the fact, manufacturing is huge in Mexico and it's not just for cheap simple products. Big, expensive, complex products like aviation components, telecommunication products, medical technology, and pretty much everything else we use here in the United States are manufactured in Mexico to high standards.

I thought of one last thing on my bus ride home. I can't wait to come back here again. This trip was nothing like I could have ever imagined. I'm looking forward to the next opportunity I will have to visit Mexico as I've learned so much about the people, the culture, and the business opportunities in Mexico.

Findings

After researching and experiencing manufacturing in Mexico firsthand it is my conclusion that Golf Pro Solution should definitely investigate the possibility of manufacturing in Mexico. The low cost of labor and low manufacturing costs, partnered with company that will do all the work of securing labor, land, and even run operation makes for a very straight forward international manufacturing operation. The level of innovation combined with a highly skilled work force is a testament to the of quality manufacturing and is why so many foreign companies choose to do business in places like Hermosillo.

On the tours of the manufacturing parks we saw huge aerospace company's like Boeing and Lockheed Martin manufacturing in at these tech parks in Mexico. These companies were manufacturing critical components for their aircrafts highlighting the high level of skill labored in Hermosillo.

The Honors Entrepreneurship program has given me a valuable experience that not only allowed me to travel but also gave me the opportunity to immerse myself in the culture and business practices of another country. The lessons learned from this experience will be carried with me as I move forward on my pursuit of success, happiness, and high learning.

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Appendix A.

Business Plan:



Golf Pro Solutions

Never struggle to find your balls again

March 26, 2018

Chase Boiseau

Jahron Francis

Hamasseh Pourhamzeh

Douglas Taylor

Dillan Thompson

University of Arizona

Eller College of Management

McGuire Center for Entrepreneurship

chaseboiseau@email.arizona.edu

dillanthompson@email.arizona.edu

drtaylor@email.arizona.edu

jdfancis1@email.arizona.edu

hpourhamzeh@email.arizona.edu

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1.1.1. Executive Summary

Team Miami has conducted research in the golf industry and has identified three main problems that golfers face today; the golfer wants to lower their score but is unsure of how to improve, the golfer wants to speed up their pace of play, and the golfer spends too much money on lost golf balls. We have hypothesized that a trackable GPS-enabled golf ball paired with a smartphone application will ease all three of these pain points. This business plan explores the problems, customer segments, proposed solution, market analysis, and future venture plans.

Business Plan

This document describes the business plan of Team Miami which plans on producing a global-positioning system (GPS) enabled golf ball. The plan outlines: the observed problem, customer and market analysis, proposed solution, market environment, competitive analysis venture description/plan and sources of competitive advantage.

1.1.2. The Problem / Need / Pain Point

The problem that was apparent after conducting validation research that we believe we can address is that our target customers want the ability to play better golf but are unsure of how/where they can improve. Although additional validation is needed, our initial findings show that their major pain points come from time wasted searching for golf balls, penalty strokes assessed on lost balls (that affect handicap and score), and wasted money losing expensive balls.

1.1.3. Customer / The Market

Target Market Size & Growth:

According to the National Golf Foundations 2018 industry report, in 2017 there was an estimated 23.8 million people who played golf on a traditional course, with an estimated 456 million rounds of golf being played. These number were consistent with the numbers from 2016 with very little change; however, there was an estimated 14.9 million non-golfers who were “very interested” in playing golf in 2017. This number increased by 16% from the prior year. The industry is primarily male dominated; however, there is an estimated 5.8 million women who played golf on a traditional course with women accounting for 24% of traditional golfers. Also, of the 23.8 million golfers, 4.6 million (19%) of these golfers were classified as non-white golfers (Wearegolf, 2018). The average golfer is 43 years old and plays on average almost 20 rounds per year (Stachura, 2017).

Segments:

After conducting both secondary and primary research three target segments have been discovered: The Jones', middle age professionals, and youngsters. Further validation research will be conducted to further narrow the segments. See below for detailed information on the segments.

The Jones':

It is assumed that the early adopters are professionally employed adults, aged thirty-six to forty-four years, and are experiencing rapid advancement in their career. These players are predominantly male with incomes of \$75k+. Due to the recent advancements in their career, they have a high amount of disposable income. For them, golf has become an escape from both work and family life. However, this group does not play as much golf as they would like due to their demanding work schedule. As stated above, the average golfer is age 43, which fits our largest target demographic segment into this category.

The Jones' feel the need to purchase the newest and most expensive equipment for two reasons: They believe that the high-grade equipment will improve their golf game and they want to impress their friends and colleagues on the golf course. It is because of this that this group is likely to shop both in retail stores and online, or simply wherever he can find the newest and most advanced technology. Lastly the Jones' are normally members of private golf courses due to the exclusivity.

Middle age professionals:

It is assumed that our middle age professionals segment is composed of individuals forty-five to sixty-year-old, who are well established in career. This group is split equally between males and females, being predominantly white, married, and income of over 100k+. These individuals live in suburban homes with their teenage to adult children and normally belong to a country club. Their professional success allows them to play as much golf as they wish. They are the most likely to have played golf in the last 12 months and, because of the high income and status in life, these individuals normally

shop in retail store as they are not price sensitive and purchase what they want when they want.

The Youngsters:

We assume that our youngster segment is composed of individuals aged twenty-six to thirty-five-year-old who are working professional that have recently began their career. This group is ethnically diverse, with nearly half being non-white. It is also composed of middle aged families living in new suburban area; however, this group is the most likely to be single, with 4 out of 10 individuals in this group being single. When it comes to shopping habits, they are more likely to shop online than in retail stores as they do not have as much disposable income as the other two segments. Lastly, this group is more than twice as likely as the average golfer to play a round.

1.1.4. The Solution

Product / Service Mix

To remedy the discovered problem of having a high handicap, we hypothesize that we can create a Global Positioning System (GPS) enabled golf ball that pairs with an application on the user's smartphone that will allow the user to track multiple key statistics including: the trajectory of ball flight, location of their ball, and shots taken/score.

The GPS chip would need to be small enough to embed in the core of the golf ball, have an internal power source, and can withstand the repeated impacts associated with high-velocity golf swings. The chip would then pair with a smartphone application that would be designed to give an overhead view of the current golf hole, the position of the user's ball, the distance of the last shot, and the remaining distance to the hole. The application would be provided free of charge with the purchase of our balls.

Value Proposition:

The value proposition we offer to our customer is the ability to play better golf. The way we intend on delivering this value to our customers is an innovative approach to a common problem (lost balls). We will offer our customer a GPS trackable golf ball. This will allow our customer to keep track of the location of their ball, as well as keep track of other things like flight path, ball speed, score, and trajectory. This data will then be stored on the user's phone until a later time, at which point it can be downloaded and used as a training aid.

1.1.5. The Environment***Industry Description:***

Although the golf industry has been at a decline since the great recession, it has recently stabilized within the past three years. According to the National Golf Foundation, a greater interest in golf has been observed, due to establishments like Topgolf, which have changed the concept of the game to be a more family friendly sport.

Size of the Industry

Golf equipment falls under the Athletic & Sporting Goods Manufacturing Industry (NAICS: 33992a). The industry is in the mature phase of the industry life cycle with its revenue at \$9.5 billion in the past year (2018). Although the industry is in the mature phase, it is projected to grow at an annualized rate of 1.6% for the next 5 years, increasing the annual revenue to \$10.4 billion by 2024. The growth is based on: increased exports, decreased imports, direct retail sales, and an increase of physical activity in American citizens (Lifschutz, 2018).

Characteristics & Trends

The National Golf Foundation states that the number of individuals that play traditional golf in the United States has remained relatively stable over the last four years, averaging 24 million individuals per year, while the total amount of individuals that have played golf (traditional & off-green participation) has increased by over 2 million people since 2014. Off-green golf includes ranges (physical and digital) and establishments such as Topgolf (NGF, 2018).

The golfing community has developed an increased interest in environmentally responsible habits and reusable/recyclable products. There is an increasing popularity of off-green and digital range golfing, similar to what the company Topgolf offers. Digital ranges have peaked the interest of technologically inclined consumers in the golfing community. Technological advancements have been mainly limited to other aspects of play, including new club designs and ball composition, such as three- and four-layer golf balls. There is an increase in the application of statistical and data-driven tech in today's golf. Technologies such as artificial intelligence are working to aid golfers and the tasks of caddies.

1.1.6. Competitive Analysis

Description of Competition:

Currently, there are a small handful of products for sale on the market that assist users to find their ball after it is hit on the course. The most popular products at the moment are high visibility golf balls, which are traditional golf balls painted with vibrant colors that make the ball easier to find. Another product is a ball that has a BlueTooth chip in it and a separate handheld tracking device which costs upwards of \$499 (Prazza Golf Ball Finder). Due to the high costs of the trackable ball systems, a low cost trackable ball would be a competitive product.

Two startup companies are also currently developing electronics-integrated golf balls that pair with a smartphone; OnCore's Genius Ball and Chipping's NeverLost golf ball. OnCore is in the prototyping phase of a GPS-enabled golf ball almost identical to our ball. We feel that we can leverage their research and improve on the design and performance of the golf ball, which will save us time and money on research and development. OnCore has not begun presale of the Genius ball at this point.

Chipping is also in the prototyping phase of development; however, they are producing a Bluetooth-enabled golf ball due to difficulties in the development phase of a GPS-enabled ball. The Bluetooth technology will only allow the user to locate their ball but will not allow for the statistical tracking that a GPS ball would allow, giving our ball a large advantage over the NeverLost ball. They do state on their website that they plan to continue their research and, eventually, return to a GPS-enabled golf ball due to the data that GPS would allow the user to gather and use as a training aid.

To compare financials, Arccos golf and Radargolf are two companies that have similar products to what our team is trying to produce. By using these companies, we can compare sales and venture progress.

Analysis Competitive Matrix / Porter's Five Forces:

The golf ball manufacturing industry is a difficult industry to enter. There is a high barrier to entry as well as hundreds of golf ball brands for customers to choose from. For Golf Pro Solutions to be successful in this market, the product must have a strong NPV to separate itself from the competition. View *figure 1*(below) to view the competitive matrix, which compares our product with the top golf balls on the market or in development.

	USGA Size & Weight	Long Distance	Soft Feel	GPS Enabled	Paired With App
Chrome Soft	√	x	√	x	x
Superhot	√	√	x	x	x
TP5/TP5x	√	√	√	x	x
Project (a)	√	x	√	x	x
Tour B X/ Tour B XS	√	√	x	x	x
Tour B RX/ Tour B RXS	√	√	x	x	x
UFLi	√	√	√	x	x
Gamer Urethane	√	√	√	x	x
Pro V1/V1X	√	√	√	x	x
Tour Soft	√	x	x	x	x
Genius	√	√	x	√	√
Neverlost	√	x	x	√	√
Our Product	√	√	√	√	√

Figure 1: Competitive Matrix (Golf Pro Solutions)

When developed, our product will perform comparably with the top brands but have the addition of a GPS chip embedded in the ball. *Figure 2* (below), is an analysis using Porter's Five Forces to assess competition and buyer/supplier power.

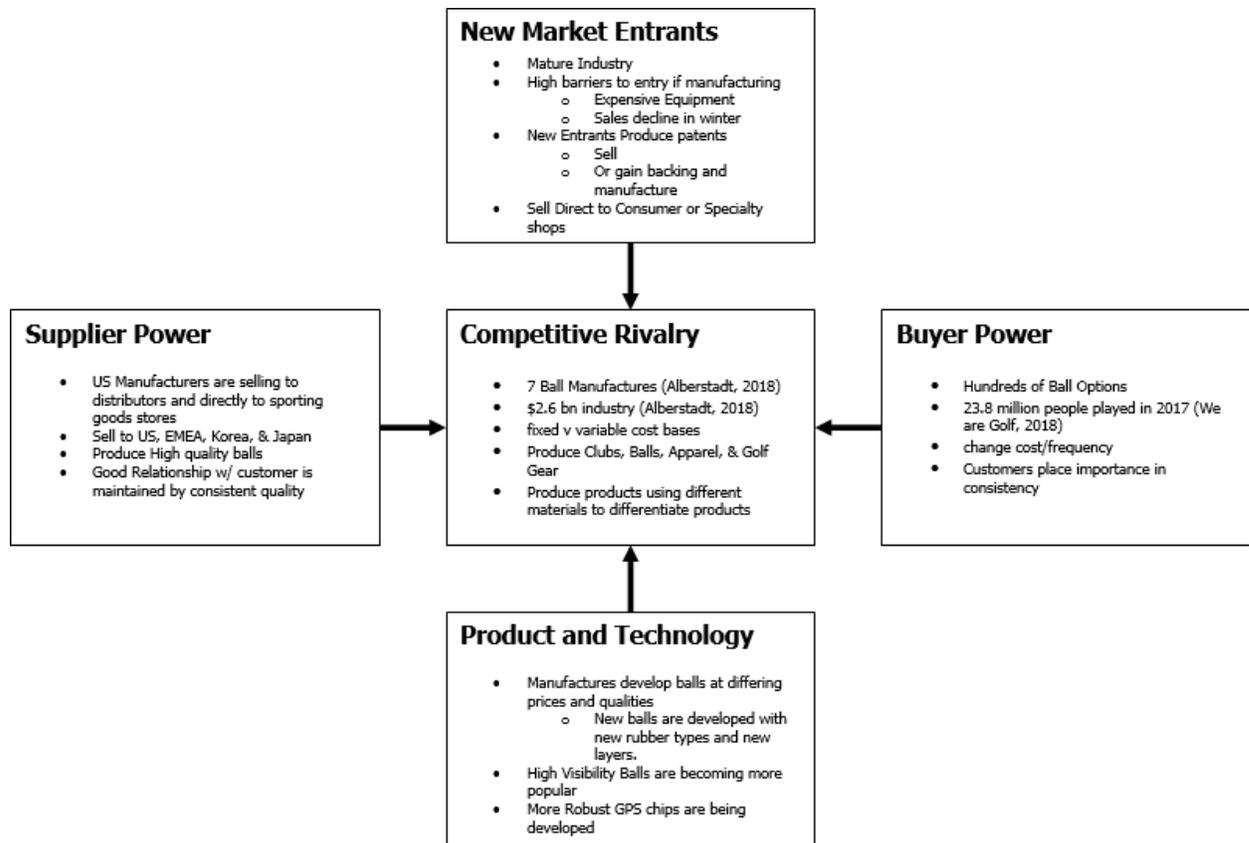


Figure 2: Porter's Five Forces - Golf Ball Industry

Competitive rivalry

In the National Golf Foundation's publication on the golf equipment industry, it is stated that in the NGF top 100, "there are seven companies that manufacture golf balls" (Alberstadt, 2018).

On average it costs premium golf ball manufactures eight dollars to produce a dozen balls, or roughly sixty-six cents per ball. On average, premium golf ball manufacturers charge thirty-eight dollars and fifty cents for a dozen of balls, or three dollars and twenty cents per single ball. This is a profit margin of four hundred and eighty percent.

There are currently two brands that are in startup phases of producing a golf ball that will have a similar unique value proposition (UVP) as the GPS ball that Golf Pro Solutions will produce (see “Description of Competition” above).

Bargaining power of suppliers

The bargaining power of suppliers is going to severely affect the venture. Since we will have few manufacturing options in our first year, we are limited to the price provided to us from suppliers. Once the technology is licensed to a large manufacturer, the bargaining power of suppliers becomes a mute point. The large manufacturer will have economies of scale and can lower the cost of production.

Bargaining power of customers

Consumers have a substantial amount of buying power in this industry due to the large variety of golf balls available to choose from. According to the validation research we conducted, casual golfers tend to purchase the golf balls that were on sale, which suggests they are price sensitive in regard to golf balls. The golfers who play more regularly tended to have a favorite brand and stuck with it. For our product to be successful, it needs to be high quality and price competitive.

Threat of new entrants

Due to the industry being in the mature phase of the life cycle and high barriers of entry, the threat of new entrants in the market is limited. The standard golf ball industry is very saturated, but technology has been rather stagnant in this industry. There are currently two companies that are in the research and development stage of a GPS-enabled golf ball. It is unlikely there will be more until a GPS ball is put on the market.

Threat of substitute products or services

The threat of substitute products is high in the golf industry. There are more than 100 brands a customer can choose from when selecting a ball. The top brands (shown in *table 1*) include: Callaway, TaylorMade, Bridgestone, Maxfli, Top Flite, and Titleist. These brands produce a variety of balls, all with separate features to tailor to the customers playing style.

Brand	Callaway		TaylorMade		Bridgestone	
Ball Name	Chrome Soft	Superhot	TP5/TP5x	Project (a)	Tour B X/ Tour B XS	Tour B RX/ Tour B RXS
Category	Tour	Distance	Tour	Feel	Tour	Tour
Performance	Soft Feel, Forgiveness, Straight Flight	Aerodynamic, Built for low drag & lift	Distance, Soft feel, mid/high launch	Less Drag, More Speed, soft feel	Reduced Spin, Increased Accuracy, Added friction	Form Cover, Reduced Spin, Increased Accuracy, Added Friction
Construction	4-Piece	3-Piece	5- Piece	3-Piece	3-Piece	3-Piece
Price	49.95	\$30	\$35	\$35	\$40	\$40
Number of colors	5	4	1	2	2	2

Brand	Maxfli	Top Flite	Titleist		OnCore	Chiplng
Ball Name	UFLi	Gamer Urethane	Pro V1/V1X	Tour Soft	Genius (startup)	Neverlost (Startup)
Category	Distance/Feel	Distance	Tour	Feel	Tour/GPS	GPS
Performance	Long Distance, Low Spin, Ultra-soft	Increased Distance, Soft	Distance, Soft	Soft, Distance	Trackable, App, Spin Rate, Stats	Trackable, App, Spin Rate, Stats
Construction	4-Piece	3-Piece	3/4-Piece	2-Piece	5-Piece	3-Piece
Price	\$35	\$25	\$55	\$40	\$100	\$100
Number of colors	1	1	1	2	1	1

Table 1: Top Golf Ball Brand Comparisons

There are currently only two ball companies that are attempting to create golf balls with a GPS embedded within. Fortunately, these balls are in the startup phase and are currently not for sale.

Opportunities for Cooperation / Partnership:

There are opportunities for partnerships available in the golf industry. Golf ball manufacturers are constantly making customized products for different organizations. Before Nike liquidated its golf assets, Bridgestone manufactured their golf balls. Another partnership example of a partnership is Topgolf and Callaway. Callaway (now part owners of TopGolf) manufactures radio-frequency identification (RFID) golf balls that are used in the institution. These partnerships give high hopes to being able to form a partnership with a large manufacturer.

1.1.7. The Venture

Venture Description:

Golf Pro Solutions will develop a GPS-enabled golf ball by embedding a self-powered GPS chip into the core of a golf ball that will communicate with the user's smartphone device. The data collected by the chip would include the flight trajectory of the golf ball, the distance traveled, and the resting location after each shot taken by the golfer. This will give the user information to use as a training aid to lower their handicap (score) in a traditional golf game.

Business Model:

Our business model consists of seven key elements: the target audience, business processes, key business resources, value proposition (described above), possible key business partners, a demand generation strategy, and possibilities for future innovation. Given that we are in the early stages of venture formation, each of these seven categories are open to change and are what our team has assumed to be correct, given our current progress through the initial validation stages.

Secondary research and preliminary primary research has identified the top three following possible target markets, although further validation will be required to solidify these audiences: the 36 to 44 year old working professional that has started advancing in their career; the 45 to 60 year old working professional that is well-established in their career; and the 26 to 35 year old working professional that has recently began their career. Refer to the *Customer/ The Market* segment for detailed descriptions of the proposed customer segment.

The key business processes would include contract manufacturing to fulfill orders placed by customers on our website, developing and maintaining an application to log data, and marketing our product. While further research is needed to identify the optimal contract manufacturers, we have found a Chinese golf ball manufacturer that will produce custom golf balls at a price of \$0.40 to \$0.60 per ball and a GPS chip manufacturer that can provide chips at a cost of \$5 per chip. We assume that a premium would be charged by the ball manufacturer due to the integration of the chip; therefore, we hypothesize that each ball will cost a total of \$6 to manufacture, including the GPS chip.

Developing a web-based application and a native phone application can easily be done with the help of computer programmers, as many GPS range finding applications currently exist and will simply be adapted to our need. Marketing the golf ball can be accomplished by utilizing social media advertising, golf tournament sponsorship, and meeting with large golf ball manufacturers to discuss the potential for licensing our design and collecting a royalty.

Key business resources include many of the elements listed above but also include capital investments, intellectual property patents, and maintaining customer lists. We have hypothesized based on average angel investments that we will be able to raise roughly \$20,000 worth of investments during the angel round. Initial founders' investments of \$25,000 would also be used to start our operations. We further believe that we would qualify to receive a \$200,000 SBA 7(A) loan with an 84-month term at an

interest rate of 8.00% (Nerd Wallet). This would sufficiently raise enough capital to produce our product through the first year and beyond.

Intellectual property patents would be filed with the U.S. Patent Office for the design of our golf balls and the process used to embed the GPS chip in the golf ball. These patents will protect us from a competitor stealing our design and producing at a cost lower than what we could charge, which would put us out of business. Maintaining customer lists can be done easily by integrating the ordering process with a transaction logging system (TLOG). The data would be automatically transferred after each transaction and could be analyzed using data analysis software such as Microsoft Access or Power BI.

As stated above, we hypothesize that a few of our initial key business partners would include a GPS chip manufacturer and a contract manufacturer to physically produce the balls. As sales and order sizes increase, we expect that our cost of goods sold would decrease, creating greater profit margins. Furthermore, we believe that once proof of concept and a sales history has been established, top brand name golf ball manufacturers would possibly license our product. Titleist and Callaway would be the greatest partnerships due to their dominance in the golf ball industry. We would look to stop manufacturing at that point and simply license the product design and collect the average sporting/golf equipment licensing/royalty fee of 5% (Parr, 2018).

To generate demand in the product, we have identified what we believe to be the best three approaches at this point in time: clickable advertising on social media (a low-cost advertising strategy), establishing brand presence through golf tournament sponsorship signage, and possible future sponsorship of PGA golf professionals. The average advertising cost on a platform such as Facebook costs \$0.27 per click or \$7.19 per thousand impressions (McLeod, 2017). This will allow us to reach a very large audience at a relatively low cost.

To extend our brand recognition, we will sponsor individual holes at golf tournaments, initially across Arizona, then expanding to nationwide tournaments. These sponsorships range in price from a few hundred dollars per hole to many thousands of dollars per hole. They offer us the ability to hang signage at the tee box of our sponsored hole to increase brand awareness. Finally, we hope to sponsor a PGA professional golfer. We would provide the golfer with free balls to use but, in exchange, we would have a logo on the clothing of the golfer and our ball would be used on national television, further extending our brand recognition and association with professional golf equipment.

Future innovations will be a key driver in the production of our product. As GPS chips evolve, they will become smaller and able to hold longer charges. This could possibly enable us to develop lighter golf balls that can be used for longer periods of time before replacement. Additionally, research into accelerometers could lead to more advanced data being collected. The spin rate and pitch and roll of a ball can indicate many performances enhancing measures that could be corrected in the golfer's swing or strike of the ball. As technology and microchips get smaller and more powerful, we will continue to research and develop ways to enhance our ball, thereby enhancing the golfer's game.

Go To Market

Golf Pro Solutions go to market strategy will undergo three phases to get the product to a point of sustainable and scalable revenue. Phase one is development and awareness, phase two is proof of concept via sales, phase three is licensing and scaling.

Phase One: Development and awareness

The first steps in our go to market strategy is to complete a working prototype and build a high performing website to grow product awareness and eventually sales. Prototypes cost range from \$30,000 - \$100,000+. Due to the to GPS, Bluetooth, and golf ball technology already existing and only needing to be combined we estimate the prototyping costs to be \$50,000 - \$75,000. Once the working prototype is complete and manufacture relationships are established, presale of the product will be implemented.

A low cost yet high performing website (golfprosolutions.net) is to be developed by Dillan Thompson using WordPress and Cloudflare. Content marketing with a local search engine optimization (SEO) strategy will be implemented by posting weekly golf articles focusing on Phoenix area keywords as well as a backlink strategy.

A goal of three backlinks (two average quality, one prime quality) a month. An offsite strategy will be implemented in May of 2019 where local listings will be created (Facebook page, google business, yelp, etc.). On average a new website takes six months to be found on the first page of google if a proper SEO strategy is implemented.

Once the prototype has been completed and a working systematic has been developed, a golf ball manufacturer will be found which will be capable of producing our product. A small order will be placed which will be used in of initial proof of concept sells.

Phase Two: Proof of Concept

For Golf Pro Solution's GPS ball to be attractive to large golf ball manufacturers for licensing, online and local pro shops will be to produce sales which will be used as a proof of concept when a licensing agreement is presented to a large manufacturer.

In the first year we estimate to 300 GPS enabled golf balls to be sold. A goal of 75% of the sales will be attributed to pro shops while 25% being online sales to keep the cost of customer (CAC) as low as possible. When selling larger amounts in the future, online sales will take precedence over the pro shops.

To find pro shops in Phoenix to house our product a “door to door” campaign will be implemented, where the GM and Sales Manager will visit the top performing country clubs in the Phoenix area, where relationships will be developed and agreements to sell will be made. A discount of 20% of retail price is expected to sell at these stores.

To sell online a low cost pay per click marketing strategy will be implemented using google and Facebook ads. The cost per click of a geographic ad pertaining to golf balls in the phoenix area is \$1.36 a click. A retargeting ad campaign will also be implemented to increase the chances of a sale. A test campaign will be implemented to determine the average number of clicks to produce a sale. If the return on investment is not great enough or negative, the strategy will be reevaluated, and pro shop sales will be the primary source of revenue for the first year while other campaigns to develop brand awareness will be implemented.

Phase Three: licensing and scaling

In the first year, once revenues are being generated, connections with national golf ball manufacturers will be created. By leveraging the relationships developed in the “door to door” campaign with pro shops, we will have a higher likelihood to be connected to the correct individuals who are in charge of product development within large manufacturing companies.

The most likely company to purchase our license is Titleist, due to their production of RFID balls for Topgolf. By already having a similar product, it will be easy for the manufacturer to produce a GPS golf ball using our technology. Once licensed it is estimated ball sales estimated to generate 1% of total revenue of Titleist by year 5.

Once licensed, new research and development will be conducted by the prototyping company and software developer to add an accelerometer and greater number of

features on app. By further developing the product it will make the chances of relicensing greater.

If no producers will license the technology, we will contract a golf ball manufacturer in the US to produce and we will fulfill sales and shipping. Last case scenario, if we can't get a contract with a manufacturer, we will purchase molding equipment and produce in house.

Project Timeline

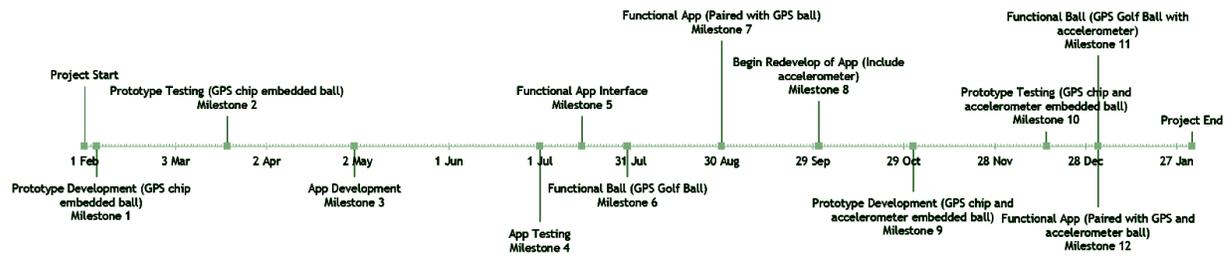


Figure 3: Project Timeline

Project Milestones

Date	Milestone	Assigned To	Position
2/1/2019	Project Start		20
2/5/2019	Milestone 1	Prototype Development (GPS chip embedded ball)	-10
3/20/2019	Milestone 2	Prototype Testing (GPS chip embedded ball)	10
5/1/2019	Milestone 3	App Development	-10
7/1/2019	Milestone 4	App Testing	-25
7/15/2019	Milestone 5	Functional App Interface	10
7/30/2019	Milestone 6	Functional Ball (GPS Golf Ball)	-10
8/30/2019	Milestone 7	Functional App (Paired with GPS ball)	35
10/1/2019	Milestone 8	Begin Redevelop of App (Include accelerometer)	15
11/1/2019	Milestone 9	Prototype Development (GPS chip and accelerometer embedded ball)	-15
12/15/2019	Milestone 10	Prototype Testing (GPS chip and accelerometer embedded ball)	5
1/1/2020	Milestone 11	Functional Ball (GPS Golf Ball with accelerometer)	30
1/1/2020	Milestone 12	Functional App (Paired with GPS and accelerometer ball)	-20
2/1/2020	Project End		5

Figure 4: Project Milestones

Operations

Golf Pro Solutions wants to focus on the technology of the golf ball starting with the minimum viable product of a location trackable golf ball and eventually incorporate an accelerometer and ball trajectory features to optimize the user experience. The venture is not focused on running a manufacturing facility since this will allow the business to focus expertise in technology, research, and development.

To get the final product to the customer, GPS will work close with the contracted manufacturer to sell the product online. Sales will be processed through FedEx from the manufacturing facility. Once the technology is licensed through a brand, they will distribute the balls according to their business operations.

Management

Current Management consists of the five team members of the venture. Our current five positions are General Manager, Sales and Marketing Manager, Operations/Human Resources Manager, Financial Manager, and Technology Manager. While the company grows, new members will need to be added to the team to supplement the company's needs.

The General Manager

The General Manager, Doug Taylor, is responsible for developing timelines, fundraising, creating relationships in the golf ball manufacturing industry, and ensuring the team is completing the necessary tasks by or before their deadlines. Doug is the team's most charismatic individual and his networking skills will be leveraged to create strong relationships in the industry to ensure the venture has the resources it needs to succeed.

Sales and Marketing Manager

The Sales and Marketing Manager, Jahron Francis, is responsible for developing a high performing website, developing relationships at pro shops in southern Arizona, and building a sales team. As the venture progresses, the sales manager will need to build a larger sales team that will eventually consist of regional and local sales managers.

Operations and Human Resources Manager

The Operations and Human Resources Manager, Dillan, is responsible for the communication between the sales team and manufacturers, fulfilling orders, hiring talent, and state and federal law compliance. While the company grows, a production manager and customer service call center will be hired to assist with fulfilling orders and user experience.

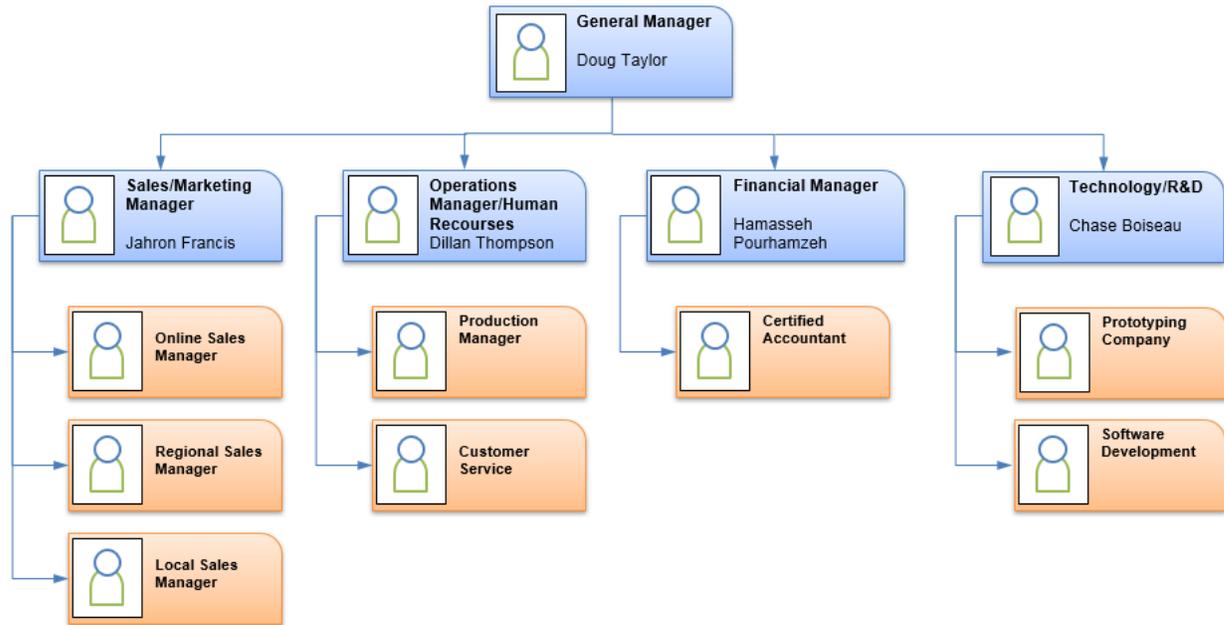
Financial Manager

The Financial Manager, Hamasseh Pourhamzeh, is responsible for creating budgets, managing funds, creating reports, and direct investment activities. While the company grows the Financial Manager will work with a certified accountant to ensure accurate financial records and ethical operation.

Technology and Research and Development Manager

The Technology and Research and Development Manager, Chase Boiseau, is responsible for creating specifications for our products, product development, and

software development. This individual will be working directly with prototyping and software companies.



1.1.8. Sources of Competitive Advantages

We believe that our company has three main competitive advantages. The founders, the product and hypothesized intellectual property rights, and the technology that we believe we can produce will be our biggest sources of competitive advantages. These will be the driving forces behind our successful business venture.

People are the most important resource that a company can have, and our team has a great work ethic, a common goal, are innovative, and resilient. The intellectual property rights that we should be able to obtain will be our second most important competitive advantage. The design and utility patents will be filed once the prototyping has been completed and will protect the company from competitors replicating our product. Lastly, the technology that we assume we can develop will be the first of its kind. Although products exist with similar enhancements, there is no product currently on the market with a GPS chip embedded in the ball and no ability to track the ball directly on the user's smartphone.

Financials

1.1.9. Financing

As a golf technology company, the business plans to operate as a C corporation. This business form will allow the company to raise the most capital. At the beginning of the start-up, the 5 founders will each invest \$5,000 from personal savings and \$20,000 will be acquired from an angel investor which will have 4% equity stake in the company. Based on the valuation, the return on investment will be \$600,000 upon exit yielding a 3,000% return on investment. In the fourth month of operations a loan of \$200,000 will be used to form a contract with a manufacturer and market the ball before licensing the technology starting year 2.

Start-up expenses, such as corporation formation, asset acquisition, and starting inventory are projected to be \$13,900. The upfront costs for research and development will be \$100,000. In the first few years the company will nail the technology to ensure the user is not going to run into problems with the ball. We will have to sample roughly 1,000 test balls before sales begin. It is assumed that the sales growth will be 20% until the end of year 2. However, for R&D that rate is to stay at 20% or increase for at least the first 5 years of operations. The company itself does not have many assets and the main focus of the business is to solidify the GPS chip which requires adequate investment in this process.

The hard assets we have are computers and office furniture, which are projected to cost \$10,500; therefore, our cash will be held as collateral for the loan. We will have a first production run of 60 golf balls totalling \$360. Prepaid liability insurance will cost \$500 for 12 months and will be amortized over the year. Capital expenditures will be accounted for in year 1. Unless we expand the business later, there will be no additional expenditures. A utility patent will be filed costing \$5,000. The United States Patent and Trademark Office (USPTO) fees will total to \$3,000 including filing, search, and examination fees. Additional maintenance fees will cost \$2,000. The patent is set to begin April 19, 2020 after the completion of prototyping. The first step in pursuing the idea is to patent the intellectual property inside the golf balls. To reduce costs we will be filing the patent through Rocket Lawyer, an online patent lawyer which facilitates the paperwork electronically.

The \$200,000 loan will start to be paid off in September of 2021, halfway through the five-year forecast. Including the 8% rate on the loan, we will make payments of \$2,571 from month thirty and on.

1.1.10. Industry Historical Analysis

Athletic & Sporting Goods Manufacturing

Golf equipment falls under the Athletic & Sporting Goods Manufacturing Industry (NAICS: 33992a). The industry is in the mature phase of the industry life cycle with its revenue at \$9.5 billion this past year (2018). Although the industry is in the mature phase, it is projected to grow at an annualized rate of 1.6% for the next 5 years, increasing the annual revenue to \$10.4 billion by 2024. The growth is based on: increased exports, decreased imports, direct retail sales, and an increase of physical activity among Americans (Lifschutz, 2018).

According to Lifschutz (2018), the revenue in the industry is attributed to four different product segmentations: golf equipment, fishing and tackle gear, playground equipment, and other sporting goods. As shown in *Chart 1* (below), golf equipment generates 47.6% (\$4.5bn) of the total revenue in the industry. According to the National Golf Foundation, \$2.6 billion of revenue is generated from equipment such as clubs and balls (Alberstadt, 2018). There has been a slight decline in revenue generated by golf equipment in the past several years, causing companies like Nike and Adidas to liquidate their golf equipment assets.

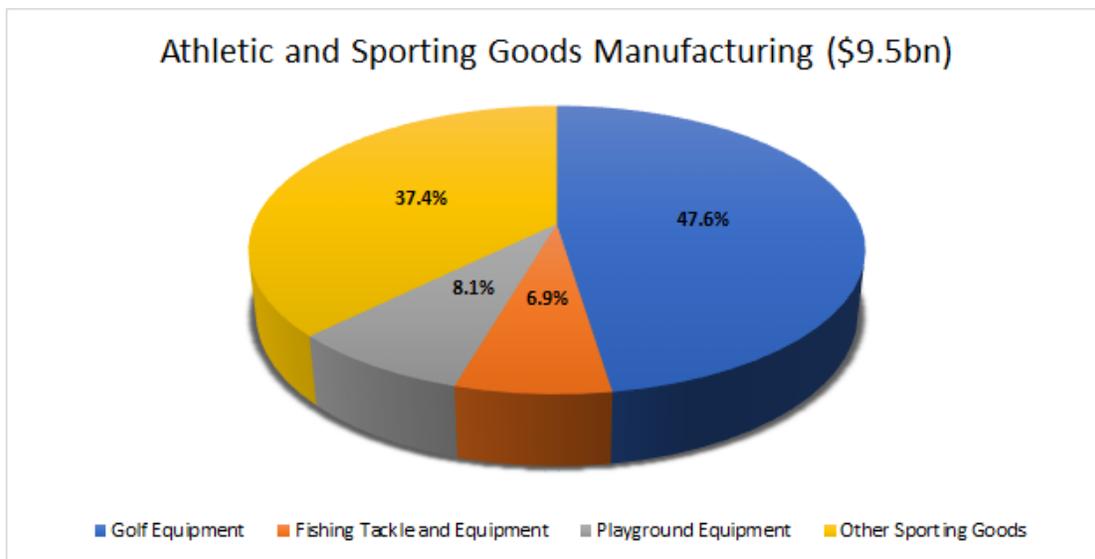


Chart 1: Product Segmentation

Due to the decrease in the number of golf players in the past 15 years, golf equipment manufacturing companies have been exiting the market or consolidating, where small

companies are being bought out by large companies such as Callaway. Currently Callaway holds the greatest share in the Athletics & Sporting Goods Manufacturing Industry, at 6% of the total revenue generated (Lifschutz, 2018).

Golf Industry

The other top golf manufacturing companies include: Acushnet (Titleist), Bridgestone, Cleveland/Srixon, Cobra Puma, PING, Tour Edge, Wilson, U.S. Kids Golf, PXG, TaylorMade, and Mizuno (Alberstadt, 2018).

According to an article featured by the National Golf Foundation (NGF), The golf equipment industry has recently become stable since the great recession in 2008. Now that the industry is more stable, the golf market place shouldn't see too many more drastic changes in the upcoming years (Alberstadt, 2018). Due to the golf equipment industry consolidating and stabilizing, the strategy of introducing a new product and selling the license to a large company may be the best option for a golf ball with a GPS chip.

Market Trend

According to a Mintel report on the golf industry, the number of individuals that play golf has been at a decline since 2003, where more than 30.6 million individuals played traditional golf. Since 2003, the amount of baby boomers that play has been roughly the same while there has been a decline in other age ranges.

The NGF states, the number of individuals that play traditionally has remained relatively stable at an average of 24 million individuals for the past four years, while the total amount of individuals that have played golf (traditional & off-green participation) has increased by over 2 million since 2014. Off-green golf includes ranges (physical and digital) and establishments such as Topgolf (NGF, 2018).

NGF conducted research which found the number of non-golfers who said they're "very interested" in playing golf increased from 12.8 million in 2016 to 14.9 million. Off-course activities has played a large factor in these growing numbers. This could mean that the industry has the potential to grow in the upcoming years while individuals find joy in playing golf at institutions like Topgolf.

Trackable Golf Balls

Currently there are a small handful of products on the market that assist users in finding their ball after it is hit on the course. The most popular product at the moment are High Visibility golf balls, which are painted with a vibrant color that makes the ball easier to find. Another product is a ball that has a Bluetooth chip in it and a separate tracking device which costs upwards of \$499 (Prazza Golf Ball Finder). Due to the high costs of the trackable ball systems, a low-cost trackable ball would be a competitive product.

To compare financials, Arccos golf and Radargolf are two companies that have similar products to what our team is trying to produce. By using these companies, we can compare sales and venture progress.

Summary

According to Lifshutz, \$4.5 billion of revenue is generated within the golf equipment segmentation in the Athletics & Sporting Goods Manufacturing industry (2018). Although the golf industry has been in a decline since 2003 (Mintel, 2012), the industry has begun to stabilize, and more individuals are starting to show an interest in the sport due to organizations like Topgolf. With this new interest and the market stabilizing, it is a good time to introduce new technology to the industry.

1.1.11.

1.1.12. Pro Forma Financial Statements

Financial Projections- Medium Demand Case

Starting with the balance sheet, assets are increasing significantly mostly due to the increase in cash year to year. However, the liabilities remain steady. The net working capital deducted or added (if negative NWC) made a big impact to the free cash flows which were later used in valuation of the firm. In the income statement sales revenue dominate adding roughly \$9,000,000 over the first five years of operations. The firm only has costs of goods sold in the first year while contracting with a manufacturer until the technology is then licensed over to a ball manufacturer.

As a startup, in year one of operations net income is a negative number which is typical for most new ventures. The interest coverage ratio is 2.65 meaning the business has enough to cover interest payments. The net profit margin is -4.19 meaning the venture is unprofitable for this first year. Current ratio is 2.63 indicating that the current obligations can be paid off. Sales increase significantly in year two due to licensing with a name-brand company. The interest coverage ratio is 5.19, net profit margin is -0.84 the venture is still unprofitable however the margin has increased. Current ratio is -0.29. In year three, the interest coverage is 58.51, net profit margin is 0.56 which shows profitability,

and current ratio is 3.08. In year five, the interest coverage ratio is 837.71, net profit margin is 0.68, current ratio is 1515 this ratio is increasing exponentially because sales are constantly increasing but at the same time no new debt is being issued. In year 5, the interest coverage ratio is 2582, net profit margin is 0.69, current ratio is 121

To summarize, interest coverage ratio is increasing significantly because sales take off when technology is licensed over to ball manufacturer starting in year two. Overall net profit margin is increasing slowly but steadily, and it may be due to repaying the loan and other operating expenses. The current ratio is consistent due to sales growth and no additional liabilities taken on. The ratios are remaining the same or increase slowly.

1.1.13. Assumptions to Financial Statements

Assumptions for General Data tab (Reference Excel file)

The firm will be in business to create GPS enabled golf balls. In the first year of operations, as sales history is established, the firm will contract a manufacturer to produce the golf balls. Then the plan is to license the technology to a ball manufacturer in order to save costs of running a manufacturing business and let an already existing manufacturer produce our balls (economies of scope). In April of 2019 we will hopefully get \$20,000 from VC's to fund our venture. On top of that we will each contribute \$5,000 from our personal savings totaling to \$25,000 to start the venture.

Our payroll tax will be 7.65%. Employee benefits will equal to 15.6% of salaries. The federal tax rate will be 21% and the state tax rate of 4.9%. Our customers will pay us prior to receiving their golf balls with credit or debit through our website for the initial offering. 10% of customers will pay within 90 days. 5% of sales will be uncollectible. However, after year one we will not have bad debt expense since the licensor will be bearing that risk.

Month 2-12 of the first year we will sell through a website which will then ship out our product through the manufacturer directly to the customer thereby eliminating the need to carry inventory on hand. During the time period from May 2019 through March 2020 we will have significantly higher COGS than we plan to have down the line, post-licensing. The revenues will be generated purely through sales from golfprosolutions.net. The first 1,000 balls will generate \$0 in revenue because as test balls they are for the customers to use and give us feedback on the viability of the product and their satisfaction. That puts us at a -\$6 loss per ball (\$1 cost of ball, \$5 ball) totaling -\$6,000. From year 2-5 we will not directly sell the balls they will be sold by the licensor and we will collect a royalty of 5% on the sales. Our labor cost will be combined with material

costs due to contract manufacturing. We will pay the operating expenses in the month incurred.

We will pay for liability coverage at the beginning of each year to avoid lawsuits against accidents with our product. Starting in month 1 of the first year we will prepay \$500 for liability coverage. Monthly we will incur insurance expense of \$41.66 on our income statement. Due to the nature of our business and licensing there will be less personal risk.

The hard assets we are going to buy 5 computers at \$2000 each, 5 desks and 5 chairs the set equaling \$500 total and, we will all work from home. We do not plan to rent an office since our manufacturing is going to be outsourced. The computers will be depreciated over five years and have no salvage value since they will be outdated. The office furniture will be depreciated over ten years with no salvage value.

During the first month assuming we patent our technology, we purchase a patent worth \$100,000. And it will be amortized over 10 years.

In July of 2019 we will take out an SBA 7 (A) loan with a principal amount of \$200,000. The loan has a term of 7 years with an interest rate of 8.00% based on average SBA loan amounts with the prime rate of 5.25% plus a 2.25% premium rate, as of November 2018 (Fundera, 2018) (Nerd Wallet, 2018). We assume this loan will be enough for us to get started in the first year of operations since it will fund R&D costs, patent costs, and app development costs. The mobile app that will accompany the ball will cost around \$140,000 to develop with the low end being \$100,000 and high end being \$300,000. We predict the app will take 6 months to develop which plans to begin in conjunction with prototyping starting May 2019. In September of 2021, two years and two months after we took the loan out, we will begin repaying the loan back with payments of \$2,571 each month.

Assumptions for Sales Tab (Reference Excel file)

There is only one type of golf ball we are selling. A GPS enabled golf ball partnered with an app interface that allows the user to keep score, track flight trajectory, and locate their ball easily. Each ball will have these features. We will charge \$29.99 per golf ball and it will cost us \$6 in materials/labor per ball to manufacturer.

For high demand we expect to sell 20 golf balls in month 2 of the first year of business with a sales growth rate of 35%. During years 2-5 of our business we expect to license

our product, most likely to Titleist, a subsidiary of Acushnet Holdings. In 2016, Titleist golf balls generated \$518,859,000 in sales (Acushnet, 2016). Given the average price of \$4 per Titleist golf ball, this equates to roughly 130,000,000 golf balls sold. We assume to capture 1% of the revenue generated, which would place gross sales of our product at \$5,188,590 through the Titleist brand. Based on our premium price of \$30 per ball, this would equal 1700 balls sold in the first month of licensing (month 13), which is not unreasonable given the Titleist brand recognition. Based on the golf/sporting equipment average licensing percentage of 5% (Parr, 2018), this would produce a royalty of \$259,429.50 during the first year of licensed sales through Titleist. We are assuming a 35% growth rate for months 13 to 48, at which point the growth rate will reduce to 0%.

For Medium demand we expect to sell 10 golf balls in the second month of operations. Then our sales growth we assume will be 20% month over month through month 12. Bringing us at 62 balls sold in month 12. During years 2-5 of our business we expect to license our product; therefore, our sales are going to increase exponentially given that a name-brand licenses and markets our product. We would expect the same first-month-licensing sales of 1700 balls in month 13, and keep the sales growth constant at 20%. We are assuming a 20% growth rate for months 13 to 48, at which point the growth rate will reduce to 0%.

For low demand we expect to sell 5 golf balls in month 2 of the first year of business with a sales growth rate of 10%. During years 2-5 of our business we expect to license our product and the first month sales assumptions described above with the same growth rate of 10%. We are assuming a 10% growth rate for months 13 to 48, at which point the growth rate will reduce to 0% thereafter.

Assumptions for Salaries Tab (Reference Excel file)

We have agreed that during the first year of operations we will not pay ourselves a salary. Starting in month 13 each C suite executive will be paid \$2000 a month for months 13 through 24, at which point each founder will receive an increase of \$500 in month 25. We will award future raises based on the financial performance of the company. There are 5 founders including: CEO, CTO, CFO, COO, and the CMO.

Assumptions for Operating Expenses Tab (Reference Excel file)

Other than our liability coverage expense and our patent amortization expense we will have an employee benefit package that includes health insurance and workers compensation which is estimated at 15.6% of our salary. Again, no rent expense, we will be working from home.

Marketing Assumptions

\$2000 per month will be allocated for months one through twelve on marketing expenses. 75% of the funds will be put towards direct marketing which will include: hole sponsorships, lunch meetings, and travel expenses. The other 25% of the funds will be spent on indirect marketing which includes AdWords and Facebook campaigns.

From months 13 to 60 the licensed company will be conducting the marketing efforts for the product. To maintain good standing relations \$200 a month will be allocated to conduct in person meetings.

1.1.14.

Analysis of Risk

The greatest risk in the model is the assumption that the product license will be purchased and used by a name brand manufacturer. If a manufacturer does not purchase the license and pay a royalty per ball the exponential growth of expected sales will not be feasible. If this is the case, it is assumed that the sales growth will reduce to 10% a month in the medium growth model and cause the business to operate at a loss for the first three years while earning a profit of \$108,000 in year 4 and \$643,000 in year 5.

For the first three years of the venture, it is not feasible to sell enough units to breakeven due to operating expenses (assuming a licensing deal cannot be reached). The units required to break even are listed respectively from years one to five: 1496 units, 111,832 units, 136,601 units, 136,601 units, and 136,601 units. In order to break even.

After conducting a sensitivity analysis, it is apparent that the most sensitive variable within the financial plan is the percentage paid for royalties. In the financial model, the royalty gained is assumed to be 5% (start in year 2), which yields a net profit of \$12.56 million by year 5. *Table 1* (below), shows both the estimate net profit or loss as well as the percentage change of profit caused by an adjustment of the royalty rate (base 5%). Per every percentage change in amount earned by royalties, there is an average of 21.8% difference in the profits.

Percentage Paid in Royalty	Percentage Change in Profit (loss)				Net Profit (loss)			
	Year 2	Year 3	Year 4	Year 5	Year 2	Year 3	Year 4	Year 5
8%	67.5%	72.2%	61.7%	60.7%	(27,760)	870,822	8,878,793	20,200,911
7%	45.0%	48.2%	41.2%	40.5%	(46,937)	749,091	7,749,144	17,656,210
4%	22.5%	24.1%	20.6%	20.2%	(66,114)	627,360	6,619,496	15,111,508
5%	0.0%	0.0%	0.0%	0.0%	(85,291)	505,629	5,489,847	12,566,807
4%	-22.5%	-24.1%	-20.6%	-20.2%	(104,467)	383,898	4,360,199	10,022,105
3%	-45.0%	-48.2%	-41.2%	-40.5%	(123,644)	262,167	3,230,550	7,477,404
2%	-67.5%	-75.1%	-61.5%	-60.7%	(142,821)	125,920	2,115,418	4,932,702

Table 1: Sensitivity Analysis - Change in Net Profit (loss) per Percentage Paid in Royalties (Base 5%)

1.1.15. Venture Valuation

Based on our three-valuation methods Venture Capital Method, CEQ, and RADR the valuations at time zero came out to \$15,402,995.03 for the Venture Capital Method with a discount rate of 40%. RADR valuation, \$52,309,464.18 and CEQ, \$38,061,641.81. The calculations can be seen in *table 2* (below).

	PV	Year 1	Year 2	Year 3	Year 4	Year 5	Year 5
Expected cash flow		(73,064.81)	53,968.50	9,587.61	16,686.42	82,931,447.46	82,907,351.52
Cash flow variance		1,337,145,889.61	23,156,652.56	337,862,511.26	285,515,712.55	1,725,413,908,793,130.00	
Cash flow standard deviation		36,567.01	4,812.14	18,381.04	16,897.21	41,538,101.89	
Risk-free rate		0.03	0.0609	0.092727	0.12550881	0.159274074	
Market rate		0.15	0.3225	0.520875	0.74900625	1.011357188	
Market risk premium		0.12	0.2616	0.428148	0.62349744	0.852083113	
Variance of market returns		0.015	0.03	0.045	0.06	0.075	
Standard deviation of market returns		0.122474487	0.173205081	0.212132034	0.244948974	0.273861279	
Correlation of firm CF and market returns		0.3	0.3	0.3	0.3	0.3	
Comparable firm beta		0.5	0.5	0.5	0.5	0.5	
CEQ Present Value	38,061,641.81	(81,372.11)	48,815.25	(1,411.12)	3,361.40	38,092,248.38	
RADR Present Value	52,309,464.18	(67,031.93)	45,286.99	7,336.70	11,609.90	52,312,262.52	
VC Method Medium Demand CF							
VC Method-PV at 40%	15,429,145.50	(52,189.15)	27,534.95	3,494.03	4,343.61	15,445,962.06	Terminal Value 28128.7008 0.2 140643.504

Table 2: Valuation Calculations

The valuation that is most appropriate for this firm is the Venture Capital Method because it is a startup firm therefore the high discount rate of 40% will consider the risk associated with the cash flows when discounting to the present value. The RADR method adjusts the discount rate by risk premium yielding the highest valuation out of the three methods. The CEQ method adjusts the free cash flows by volatility yielding the next highest valuation.

The liquidity discount rate assumed is 30%. Since the plan for the company is to license with a ball manufacturer, the firm's exit strategy is to be bought out by an existing ball manufacturer with a large market share. One that is willing to acquire the firm after the fifth year of operations. Using the EBITDA multiple method, the firm is valued at \$135,742,992 (EBITDA year 5: 16,967,874 * 8*0.70= 95,020,094.4). The average EBITDA multiple across three comparable firms in the industry came out to 8. The three firms are Acushnet, Bridgestone, and Callaway.

The golf market has a relatively low volatility therefore we chose to allocate a probability of 0.2 to the high demand case, 0.6 to the medium demand case, and 0.2 to the high demand case. The average beta of Acushnet, Bridgestone, and Callaway are 0.5 indicating a low volatility.

1.1.16. References:

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1.2.1. Appendices

Appendix A: Free Cash Flow Calculation

Medium		Federal: 21%		State: 4.90%						
Year 1		Year 2		Year 3		Year 4		Year 5		
OPBIT	- 28,934	OPBIT	- 71,862	OPBIT	650,008	OPBIT	7,417,556	OPBIT	16,965,824	
+	6,076.14 tax credit	+	15,091.02 tax credit	-	136,501.68 tax credit	+	1,557,686.76 tax	-	3,562,823.04 tax	
+	1,417.766 tax credit	+	3,521.238 tax credit	-	312,250.392 tax credit	-	362,460.244 tax	-	831,325.376 tax	
+	1,879 Depreciation	+	2,050 Depreciation	+	2,050 Depreciation	+	2,050 Depreciation	+	2,050 Depreciation	
-	5,960.4 Δ in NWC	+	(-101,813) Δ in NWC	-	489,110 Δ in NWC	Δ NWC	- 5,473,324	-	12,550,285 Δ NWC	
-	10,500 CAPEX	-	CAPEX	-	CAPEX	CAPEX	-	CAPEX	-	2,344,584 CAPEX
<hr/>		<hr/>		<hr/>		<hr/>		<hr/>		
- 89,665.094		- 50,613.258		- 5,404.072		25,134.796				
NWC: 59,604		NWC: -47,209		NWC: 446,901		NWC: 5,920,225		NWC: 18,470,510		

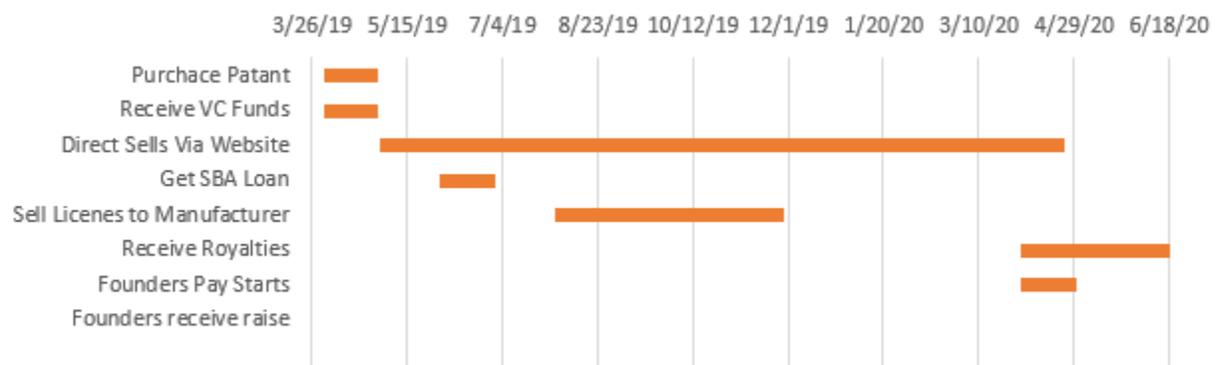
EBITDA w/ Actual Cash flows (High, Medium, Low):

		Cashflows year	Cashflows year 2	Cashflows year 3	Cashflows year 4	Cashflows year 5	EBITDA
Scenario	Probability	1	2	3	4	5	5
High	0.2	(96,221.42)	55,042.16	30,718.13	25,135.11	23,440.54	22,515,434
Medium	0.6	(89,665.09)	50,613.26	(5,404.07)	25,135.00	23,440.58	16,967,874
Low	0.2	(107.34)	62,960.58	33,432.15	(17,108.00)	26,717.42	605,365

Table 3: Basic Financial Breakdown:

	Year 1	Year 2	Year 3	Year 4	Year 5
Projected sales	\$ 322	\$ 67,287	\$ 599,936	\$ 5,349,093	\$ 12,049,632
Material Cost Per Unit	\$ 6	\$ -	\$ -	\$ -	\$ -
Cost of Sale	\$ 1,929	\$ -	\$ -	\$ -	\$ -
Labor Cost	\$ -	\$ -	\$ -	\$ -	\$ -
Net Sales	\$ 9,353	\$ 100,930	\$ 899,905	\$ 8,023,639	\$ 18,074,448
Operating Expenses	\$ 36,357	\$ 172,793	\$ 249,896	\$ 606,083	\$ 1,108,623
Interest Expenses	\$ (10,222)	\$ (13,429)	\$ (11,143)	\$ (8,857)	\$ (6,571)
Income Tax	\$ -	\$ -	\$ (133,234)	\$ (1,918,853)	\$ (4,392,447)
Net Profit (loss)	\$ (39,156)	\$ (85,291)	\$ 505,631	\$ 5,489,846	\$ 12,566,806

Gantt Chart (time table):



Appendix B: Pro Forma Income Statement (Five Year)

In the medium demand case sales will be grown at 20% by assumption. In the thirteenth month based on the 1% of Titleist ball sales captured, 1700 balls will be sold. 1700 will be grown at a rate of 20% until the end of the fourth year in which a flat rate is assumed

there after starting in the first month of the fifth year.

Year 1:

As a startup, in year one of operations net income is a negative number which is typical for most new ventures. The interest coverage ratio is 2.65 meaning the business has enough to cover interest payments. The net profit margin is -4.19 meaning the venture is unprofitable for this first year. Current ratio is 2.63 indicating that the current obligations can be paid off.

Year 2:

Sales increase significantly in year 2 due to licensing with a name-brand company. The interest coverage ratio is 5.19, net profit margin is -0.84 the venture is still unprofitable however the margin has increased. Current ratio is -0.29.

Year 3:

The interest coverage is 58.51, net profit margin is 0.56 which shows profitability. Current ratio is 3.08.

Year 4:

The interest coverage ratio is 837.71, net profit margin is 0.68, current ratio is 1515 this ratio is increasing exponentially because sales are constantly increasing but at the same time no new debt is being issued.

Year 5:

The interest coverage ratio is 2582, net profit margin is 0.69, current ratio is 121

Summary

Interest coverage ratio is increasing significantly because sales take off when technology is licensed over to ball manufacturer starting in year 2. Overall net profit margin is increasing slowly but steadily, and it may be due to repaying the loan and other operating expenses. The current ratio is consistent due to sales growth and no additional liabilities taken on. The ratios are remaining the same or increase slowly.

Appendix C: Lean Canvas

PROBLEM ...	CUSTOMER SEGMENTS ...	SOLUTION ...
<p>1-Too high of a handicap and don't know how to get better</p> <p>Cost of lost balls</p> <p>Loss of Time Searching For Balls</p> <p>Golf Ball With Radar Technology (Radar Golf Balls)</p> <p>Bright Color High Visibility Golf Balls (Callaway Superhot BOLD Yellow Golf Balls)</p> <p>Golf Ball Finding Glasses (Ball Hawk)</p> <p>Get a New Ball</p> <p>EXISTING ALTERNATIVES</p> <p>☰</p>	<p>1-Professionally employed, 36-44 years old, has a decent disposable income due to advancing in their career but has a family and needs to save for children's college. Demanding work schedule does not allow them to play as much as they would like but they buy high-grade equipment to impress friends on course and thinking that it will improve their game</p> <p>Professionally employed, 45-60 years old, works full time. Enjoys being outdoors, playing more relaxing sports, not much free time due to demanding work schedule, has children in college or preparing to go to college in the next few years. Likes a rapid pace of play on the course because "time is money"</p> <p>Older professionals, 61-70 years of age, higher disposable income, likes to drive nice cars, does not like to get hands dirty, plays golf regularly, has flexible schedule at work, children have left the nest</p> <p>Young professionals, 26-35, wants to play more but doesn't have time, works full time job. Some in this category are content with playing once a week due work or family restrictions</p> <p>Young adults, 18-25, early tech adopters, thinks they can buy a good golf game, wants to play more. Not much, if any, disposable income due to school and/or entry level jobs. Loves sports of all kinds</p>	<p>1-Golf ball with GPS only</p> <p>Golf Ball with GPS Chip and accelerometer</p> <p>Later models can include more sophisticated tech</p> <p>Eventually would like to be PGA/tour certified</p>
<p>+ Add another card</p>	<p>+ Add another card</p>	<p>+ Add another card</p>

Appendix D: Value Proposition Canvas

GAINS ...	CUSTOMER JOBS ...	PAINS ...
Reduce Handicap / Improve Golf Game	Select Course and Hole	Handicap Score
Analyze Game stats and club stats	Select Driver Type	Slow Play
Save Money on balls	Select Ball	Time To Play A Round
Effective time management	Keep up to date with rules and course requirements	Loss of Balls
Lower Green Fees	Apply proper swing technique	Lack of Skill
Exercise	+ Add another card	Need of Training aids
Spend Time Outdoor		Bad Weather
Fun		Expense
+ Add another card		+ Add another card

Appendix E: Charts

Figure 1: Competitive Matrix (Team Miami):

	USGA Size & Weight	Long Distance	Soft Feel	GPS Enabled	Paired With App
Chrome Soft	√	x	√	x	x
Superhot	√	√	x	x	x
TP5/TP5x	√	√	√	x	x
Project (a)	√	x	√	x	x
Tour B X/ Tour B XS	√	√	x	x	x
Tour B RX/ Tour B RXS	√	√	x	x	x
UFLi	√	√	√	x	x
Gamer Urethane	√	√	√	x	x
Pro V1/V1X	√	√	√	x	x
Tour Soft	√	x	x	x	x
Genius	√	√	x	√	√
Neverlost	√	x	x	√	√
Our Product	√	√	√	√	√

Figure 2: Porter's Five Forces - Golf Ball Industry:

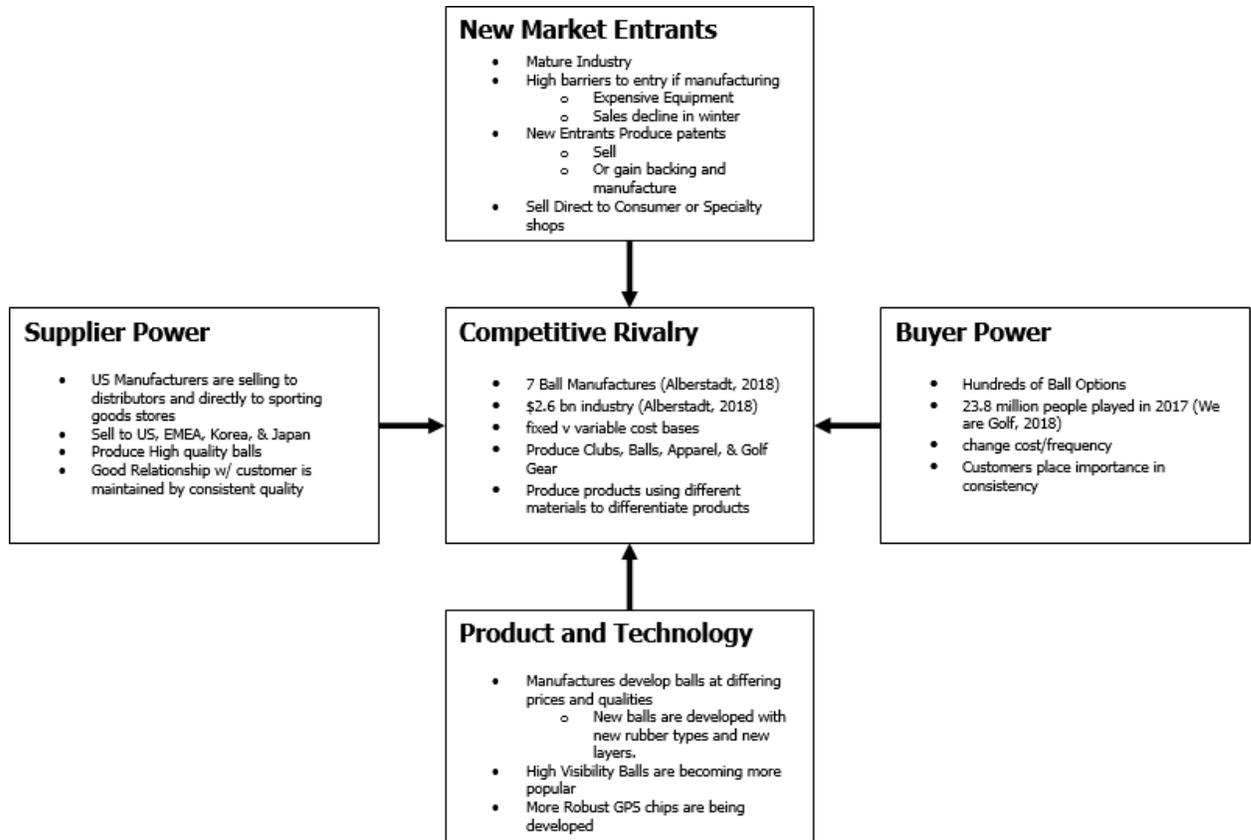


Figure 3: Project Timeline

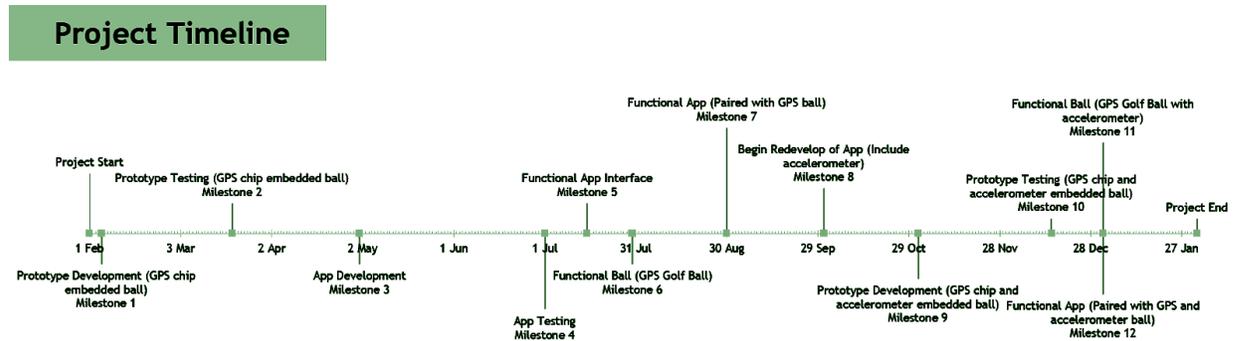


Figure 4: Project Milestones

Project Milestones

Date	Milestone	Assigned To	Position
2/1/2019	Project Start		20
2/5/2019	Milestone 1	Prototype Development (GPS chip embedded ball)	-10
3/20/2019	Milestone 2	Prototype Testing (GPS chip embedded ball)	10
5/1/2019	Milestone 3	App Development	-10
7/1/2019	Milestone 4	App Testing	-25
7/15/2019	Milestone 5	Functional App Interface	10
7/30/2019	Milestone 6	Functional Ball (GPS Golf Ball)	-10
8/30/2019	Milestone 7	Functional App (Paired with GPS ball)	35
10/1/2019	Milestone 8	Begin Redevelop of App (Include accelerometer)	15
11/1/2019	Milestone 9	Prototype Development (GPS chip and accelerometer embedded ball)	-15
12/15/2019	Milestone 10	Prototype Testing (GPS chip and accelerometer embedded ball)	5
1/1/2020	Milestone 11	Functional Ball (GPS Golf Ball with accelerometer)	30
1/1/2020	Milestone 12	Functional App (Paired with GPS and accelerometer ball)	-20
2/1/2020	Project End		5

Table 1: Top Golf Ball Brand Comparisons:

Brand	Callaway		TaylorMade		Bridgestone	
Ball Name	Chrome Soft	Superhot	TP5/TP5x	Project (a)	Tour B X/ Tour B XS	Tour B RX/ Tour B RXS
Category	Tour	Distance	Tour	Feel	Tour	Tour
Performance	Soft Feel, Forgiveness, Straight Flight	Aerodynamic, Built for low drag & lift	Distance, Soft feel, mid/high launch	Less Drag, More Speed, soft feel	Reduced Spin, Increased Accuracy, Added friction	Form Cover, Reduced Spin, Increased Accuracy, Added Friction
Construction	4-Piece	3-Piece	5- Piece	3-Piece	3-Piece	3-Piece
Price	49.95	\$30	\$35	\$35	\$40	\$40
Number of colors	5	4	1	2	2	2

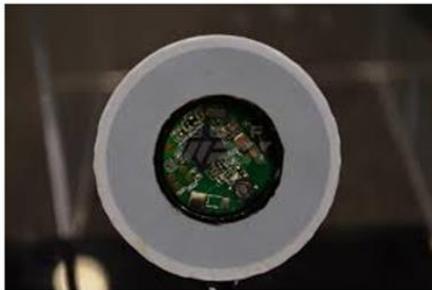
Brand	Maxfli	Top Flite	Titleist		OnCore	Chiptng
Ball Name	UFLi	Gamer Urethane	Pro V1/V1X	Tour Soft	Genius (startup)	Neverlost (Startup)
Category	Distance/Feel	Distance	Tour	Feel	Tour/GPS	GPS
Performance	Long Distance, Low Spin, Ultra-soft	Increased Distance, Soft	Distance, Soft	Soft, Distance	Trackable, App, Spin Rate, Stats	Trackable, App, Spin Rate, Stats
Construction	4-Piece	3-Piece	3/4-Piece	2-Piece	5-Piece	3-Piece
Price	\$35	\$25	\$55	\$40	\$100	\$100
Number of colors	1	1	1	2	1	1

GPS Golf Ball:



Construction: 3-piece construction

The innermost mantle layer is made from soft synthetic rubber. This is where the microchip will be embedded. The middle layer is constructed with HPF 1000 (a thermoplastic polymer), with the outer mantle made from firm thermoplastic.



Weight: 1.620 ounces

The United States Golf Association (USGA) set restrictions on the weight and size of the golf ball. The weight of the ball should not exceed 1.620 ounces (0.04593 kg)

Size: 1.68 inches.

The United States Golf Association also states that a ball must have a diameter of at least 1.680 inches.



Dimple count: 336 Dimples.

The average golf ball has between 300 to 400 dimples. Golf balls with more dimple are suited for more experienced golfer with high swing speed. Golf balls with less dimples are suited for less experienced golfers with slower swing speeds.



GPS App:



- **GPS location of ball**
- **Distance from lie to pin**
- **Ball velocity**
- **Carry flight path**
- **Score card**
- **All the data is easily downloadable to a computer for analysis**



