iPlasmaCheck

Team 1

CIS515: Business Case

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Executive Summary

For a healthy adult, physicians usually recommend annual blood work for tests like a chemistry panel or complete blood count. Current blood testing techniques are reactionary. An individual visits the doctor during a wellness check or another inquisitive concern, a blood test is ordered, and then the results are reviewed to determine if further action is required. The timeline is usually drawn out over a week or more. This can result in delayed treatment for the patient, which can have severe repercussions. Often times, with a best case scenario, the individual recognizes the symptoms and promptly visits a doctor. More often than not, the symptoms go unnoticed and the disease is caught on a blood test for something else, further delaying treatment unintentionally.

Our blood composition would significantly help us detect the fatal diseases. A home blood testing kit enabled with advanced AI and machine learning technology would solve this problem of symptoms gone unnoticed.

There is room for significant improvement in the medical testing field. That's where iPlasmaCheck comes in. Our proprietary testing technology and associated app bridges the gap between the traditional blood testing process and digital health applications to provide our customers with an immediate , and on demand snap shot of their overall health. Our goal is to provide customers with the knowledge and tools to take ownership of their health, limiting the spread of infection, lowering the overall percentage of disease, and avoiding death due to ignorance.

Our outcome based business model will provide customers with solution based blood testing before visiting a physician. With at-home testing and access to historical blood tests by the consumer and physician, blood testing becomes more efficient and diagnosis is achieved quicker than ever before.

Introduction and The Market

As it stands, the global market for blood testing was "…an estimated $53.8 billion in 2018"[1] and is expected to increase to "$60.5 billion in 2023"[2], a 12.5% increase. With the growth of this field, it's necessary for testing to become faster, more accurate and easily accessible. The digital health market has increasingly become popular as consumers trend towards more health conscious efforts. The "digital health market is expected to reach $379B, representing to register a CAGR (compound annual growth rate) of 26% over 2017-2024, according to a recent Global Market Insights report"[3]. The combination of these two industries represents tremendous potential to both the overall health of society, people will be more in tune with their overall health, allowing them to take preventative and continually corrective action.

This is a largely untapped market, in that at home/mobile blood testing is typically only used by consumers that have a reason to be monitoring their blood. The rest of the users of blood testing services are required to go to a specified facility, a step that is only taken when something needs to be addressed. "Blood testing and diagnosis is tremendously important for today's healthcare system. Blood tests provide a wide range of screening, monitoring and diagnostic capabilities that pave the way for drug discovery and the design of new treatment plans"[2]. Positioned as a disruptor to this long established industry, our innovation will allow blood testing to become more accessible and provide a way to capture data on blood metrics. This will revolutionize how physicians and consumers conduct and track blood testing, making the process more efficient. Like authors Erik Brynjolfsson and Andrew McAfee stated in their article "Winning the race with

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[1] "Global Blood Testing Market to Surpass $60B by 2023." *PM360*, 5 Nov. 2018, www.pm360online.com/global-blood-testing-market-to-surpass-60b-by-2023/.
[2] "Global Blood Testing Market to Surpass $60B by 2023." *PM360*, 5 Nov. 2018, www.pm360online.com/global-blood-testing-market-to-surpass-60b-by-2023/.
[3] Pennic, Fred. "Report: Digital Health Market to Reach $379B by 2024." *Healthcare IT News*, HIT Consultant, 19 June 2018, hitconsultant.net/2018/06/18/digital-health-market-2024/.

ever-smarter Machines", Our team is committed to win this race against all deadly diseases which could be detected through blood testing.

The Product

Our proprietary testing device, the iPlasmaCheck Kit, uses a pin prick worth of blood to assess the current state of customers health by analyzing their blood metrics. These metrics include calcium, glucose, blood count, folate, iron, and other checks that can be measured by a user's blood.

The iPlasmaCheck Kit pairs with our iPlasmaCheck app, an open source application that is available on Apple's App Store and Google Play. The iPlasmaCheck app provides customers with an easy to read dashboard that recommends corrective action based on the results of the blood tests they perform. The corrective action could include, depending on the severity of the results of the screening, recommending the customer visits the doctor, scheduling a Skype meeting with an appropriate specialist, suggesting lifestyle changes that could help improve their current state of health, or calling an ambulance.

iPlasmaCheck is different than other blood testing devices which are customized to identify just one or two diseases like Glucometer identifies glucose levels. iPlasmaCheck is a digital blood testing device which will be able to identify blood viruses, any diseases happening due to a blood transfusion or any variations in the blood composition by testing only a few drops of blood.

Another important feature about our Product would be its accessibility for customers. This digital device is designed for home use by naive users and does not require a knowledgeable laboratory scientist to collect the blood and determine the results. The machine is intelligent enough to study the blood composition and deliver lab standard results within minutes. One would wonder how that is possible. Our product is developed after years long research with the blood testing device and its requirements to study the cellular morphology and segregate the cells and identify the symptoms. This machine makes use of artificial intelligence and advanced machine learning algorithms which analyzes the blood composition just like it would analyze any unstructured data. One more unique aspect about our machine is its connectivity to the secure cloud. The machine updates any new viruses detected in worldwide and has the capability to instantly test blood samples for those viruses. These constant updates and capability to add new information about diseases are a result of our continuous effort and innovation in the field of analytics that drives the purpose of this product.

We ensure high quality material to increase the life of the device. Simplicity in the key behind keeping the maintenance cost low for this digital device. Since this device directly connects to our cloud server, most of the data storage load happens using the cloud technology.

The app saves all of the data in a secure cloud, that is linked to the customers physician, insurance providers, and any specialists that customer sees routinely. Since the data is saved in the cloud, it is easily accessible for historical tracking by the user and physician.

Business Model

The US based customers who will be targeted are the everyday consumers with the goal to address the gap between reactive healthcare and preventative care. Utilizing our proprietary digital blood testing device and an integrated, open source app, we offer customers the most complete blood testing instrument on the market. The information provided by screening results can be used to recommend immediate and long term

corrective action unlike any competing device available. The app maybe linked to a primary care physicians' network to facilitate targeted care, based on the results of their screenings.

Our business strategy is based on Porter's five forces model which helped us identify and analyze the health industry's weaknesses and strengths.

1st force: Competition in the health industry: Our product design allows us to keep the cost of the device low. We want to reach customers who are already using glucometer or need blood tests and regularly visit laboratories to get the tests done. Average households are our target base. We have different pricing for different tiers of the product. In order to compete with our rival products we plan to roll out the product at as low as $149.99. To stay ahead of the competition, we are keeping our profit margins low and are able to break even during the 1st year and start reaping profit in the 4th year.

2nd Force: Supplier Power: We do not underestimate the power of our different suppliers to work with our rivals. We do have dependency on direct suppliers for the device parts before assembly, the device compatible blood testing kit and data storage cloud services. Our suppliers work dedicatedly on delivering our products to our customers directly.

3rd Force: Buyer Power: In order to analyze the power of our buyers, we have a timely feedback from our customers. Our research team continuously works on these feedback to improvise on our product offerings.

4th Force: Threat of substitution: Laboratories visiting customers at their home for blood tests and other such services are a constant threat to our product. However, we differentiate by delivering faster results and the same level of accuracy as that of the laboratory, unlike our competitors.

5th Force: Threat of new entry: Our patents and our designs are very innovative. In order to combat the threat of new entrants, we hire the right talent and experienced scientists who are adept with vision of the healthcare industry. We take measures to stay up to date with advanced technology and optimize our product continuously to provide accurate results.

By pairing the device with our smartphone app for full intended analysis of blood tests, the market potential for this device and technology is enormous. At start-up we are just focusing on the US market, but will not restrict any international sales. To realize the tremendous profit potential of this idea, we will utilize a hybrid profit formula that uses a revenue model and cost structure. A customer may purchase the device under three different tiers outline below. The subscription gives access to up to four users in a household.

Tier	Device Cost	App Cost	App Subscription Cost Year 1-3	App Subscription Cost Year 4+
1	$249.99	$0.00	$0.00	$0.00
2	$199.99	$0.00	$0.00	$9.99
3	$149.99	$0.00	$9.99	$9.99

The profit formula for the iPlasmaCheck device would be centered on a cost structure model. Lifetime access to the app would be included with the initial purchase of the device, however the cost of the device and appropriate markup would be covered by the cost of the device. For the app, we would utilize a revenue model. The app and subscription would be offered for free to first tier customers. Second tier customers will have three free years and be charged $9.99 for each subscription year after. Third tier customers will purchase the device

for $149.99 and be charged $9.99 every year to use the app. The thought is that we would compete with any health app on the market regarding price and make the revenue on the potential volume sold.

The company will be composed of several teams focused on data analytics, software and application development, product development, sales and marketing, and customer service. The estimated cost of all employees is $2,230,000 per year. Utilizing Amazon Web Services, including overhead and other licensing costs, the estimated cost of services is $710,000 per year. That gives a projected overall cost of labor and services of $2,650,000. The application development and maintenance, research and development, and hardware development is estimated to cost $241,000,000.

Projections

We have included a breakdown of our cost and profit projections, over our initial four years of operations, below. As you can see a majority of our costs are realized in year one, as all of the aforementioned costs required for research and development of the hardware, software, and the app will be incurred prior to going to market. This results in a project loss of $210,293,996 in year one, that will be offset by profit in years two through four. We realize that this is a large loss to incur in the first year of operations, so we would look to spread these expenses over the course of the four year projection for accounting purposes. However, we are confident in our ability to quickly become profitable, so are willing to rely on outside funding through the entirety of the four year projection, with a complete return on investment by the end of year four.

Our projected customer base is projected to be 1% of the estimated US population in 2024, for a total of 3.4 million customers, within the first four years of operations. This projection includes both Kit and App users, which we expect to break out as a 40%, 60% split, respectively for 1,360,000 Kit users and 2,040,000 App users. We anticipate customers who already use blood testing devices to be early adopters of our App, as it provides a more complete assessment of their health, registering 612,000 in the first year. In subsequent years, we project slightly less adoption rates for new users of 25%, 25%, and 20% respectively. Each year we project to lose 25% of App users from previous year, but believe any users who subscribed for over two years will be lifetime users.

Our projection for the Kit is slightly more conservative, with a 15% adoption rate in years one and two, across all tiers, followed by 25% and 45% in years 3 and 4. Overall we project most customers will purchase the Kit at the Tier 3 level, as it has the lowest upfront costs, which will drive up the number of app sales, and associated revenues.

Labor	Year 1	Year 2	Year 3	Year 4
Data Management Director	$120,000	$123,600	$127,308	$131,127
Data Team (7)	$630,000	$648,900	$668,367	$688,418
Application Developer(3)	$240,000	$247,200	$254,616	$262,254
Sales and Marketing(3)	$150,000	$154,500	$159,135	$163,909
Customer Service Rep(15)	$450,000	$463,500	$477,405	$491,727
Team Leads(3)	$240,000	$247,200	$254,616	$262,254
Product Development(5)	$400,000	$412,000	$424,360	$437,091
	$2,230,000	$2,296,900	$2,365,807	$2,436,781
Services	Cost Per Year			
Software Licensing	$100,000	$100,000	$105,000	$110,250
On-Demand Cloud Services	$120,000	$120,000	$126,000	$132,300
Overhead	$490,000	$503,380	$519,361	$535,866
Total	$2,940,000	$3,020,280	$3,116,168	$3,215,197
App development/maintenance	$1,000,000	$250,000	$250,000	$250,000
R&D	$215,000,000	$5,000,000	$5,000,000	$5,000,000
Hardware Development	$35,000,000	$1,500,000	$1,500,000	$1,500,000
	$251,000,000	$6,750,000	$6,750,000	$6,750,000
	$253,940,000	$9,770,280	$9,866,168	$9,965,197

Projected Profit				
Sales	Year 1	Year 2	Year 3	Year 4
Kit Users	204,000	204,000	340,000	612,000
Tier 1	20,400	20,400	34,000	91,800
Tier 2	61,200	61,200	102,000	153,000
Tier 3	122,400	122,400	204,000	367,200
App Users	612,000	510,000	510,000	408,000
Total Users	$816,000	$1,173,000	$1,232,500	$1,402,500

Revenue					MSRP	
Tier 1	$ 5,099,796	$ 5,099,796	$ 8,499,660	$ 22,949,082	$ 249.99	
Tier 2	$ 12,850,776	$ 12,850,776	$ 21,417,960	$ 32,126,940	$ 199.99	
Tier 3	$ 19,581,552	$ 19,581,552	$ 32,635,920	$ 58,744,656	$ 149.99	
App	$ 6,113,880	$ 9,680,310	$ 8,916,075	$ 7,897,095	$ 9.99	
Total	$43,646,004	$47,212,434	$71,469,615	$121,717,773	$ 284,045,826	
	$ (210,293,996)	$ 37,442,154	$ 61,603,447	$ 111,752,576	$ 504,180	PROFIT After 4 Years

Our go-to-market strategy will focus on three key areas:

1. **Direct advertising to customers via traditional targeted ads.** Our target customer is anyone with a smartphone. We intend to use traditional advertisements on the app store, banner ads on websites, podcast advertisements, and print and media ads. Utilizing an analytical approach, we will closely monitor the effectiveness of each advertising medium to fine tune each method.

2. **Advertising and education of physicians and specialists**. One of the keys of success for the iPlasmaCheck Kit and App is buy in from the network of physicians that customers visit. While both the Kit and App can provide effective functionality on its own, the key differentiator is integration with physicians. It will be vital to engage with the appropriate groups and sign-up a vast network of physicians.

3. **Work with insurance providers and corporations, to integrate with health plans and health benefits.** Another key element will be working with insurance companies and corporate health plans to offer access to the iPlasmaCheck App and Kit as part of the employee benefit and insurance plans. As a leader in preventative healthcare, there is a benefit to insurance companies. It would lower costs of

care and premiums long term/per customer, and is of a benefit to corporations, as it can help lower the number of days lost to illness.

Capturing Value

In order to avoid thefts related to Intellectual property rights, we have our digital device registered with the United States Patent and Trademark Office (USPTO). For all our algorithms and technical codes, iPlasmaCheck has the copyright ownership. We have software embedded in our hardware device which we market without product. Our other software products like our app and the cloud offerings are licensed. We have different pricings to deliver value to our customers. The technology behind this product was purely in-house built with a team of experts and talented leaders from the healthcare industry. For any updates to our software or the device is managed and owned by iPlasmaCheck.We use cloud storage services from Amazon AWS and have annual licenses from these cloud based company. Our apps are directly connected with the cloud storage and thus can share the results instantly.

Conclusion

As we have laid out, our product exceeds what is available on the market for in-home early detection and preventative evaluations of blood diseases and disorders. We know by making our product accessible to the general public, we can eliminate the multiple recurring doctor visits and reduce the time spent at the doctor's office which will reduce the long waits frequently experienced. By connecting directly with medical networks we can share results immediately from the home tests performed for a quick response by medical professionals. Through the app, customers are able to search for ways to help reduce their risks and change their trajectory of their health as they see fit. We hope, with your investment, you will help use bring this product to market!

Citations

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