

CHINA BUSINESS CHALLENGE 2012

CEN BUSINESS PROPOSAL COMPETITION



Semi-final Round Business proposal

Proposal Name:

HealthiStyle

Team Name:

AngryPhDs

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Filled by mentors:

Level of Recommendation	Initial
Comments	

Executive summary

Problem Definition: Hypertension (persistently high blood pressure) is one of the most common nationwide diseases afflicting humans in China. Pre-hypertension is a status with high risk of becoming hypertension. Hypertension and prehypertension are called “silent killer” because about one-third of the people with it do not know they have them. It is 29.3% for people aged between 40 and 59 to have hypertension, and 48.2% of pre-hypertension, but among them, only 38.7% of hypertension is aware, and 32.3% are under treatment.

Preventing and better treating prehypertension and hypertension need long-term(>1 day) and continual(about once per hour) detection. In hospital, doctors rely on the 24-hour continual detection to confirm the hypertension rather than just taking a single measurement, because the single measurement is affected by many periodic factors. The device is too expensive for individuals. At home, most of the patients are suggested to have regular check on their blood pressure, at least twice a day. But the traditional device is not convenient so that it prevents people from using it regularly. In current market, there is no home-oriented, non-disturbing, and affordable device to meet such requirements.

Product: We will develop a solution that can complete such functions: 1, continually measure the blood pressure with a wearable device; 2, automatically collect and transfer the data through the smartphone; 3, analyze the users’ blood pressure in the Cloud system; 4, in return provide beneficial feedbacks to users. The device is affordable and specially-designed for individuals.

Competitors: Our product has the unique feature, Cloud-based analysis, which cannot be found in current market. We will compete with products in the traditional blood pressure monitor market. In 2011, OMRON (an international electronics company) occupies 68.2% market share, and ANDON (a domestic health device company) occupies 4.1%.

Market Analysis: From 2007 to 2010, electronic blood pressure monitor sale in China is averagely 3.5 million units per year. Our product will provide electronic blood pressure monitor function and data service. It has multiple advantages over our competitors. So we assume our product can occupy a market share of 2% in five years. In addition, the market is increasing in a rate of 10%-15%. Our estimated market size can reach 0.12 million units in 5 years. Our listing price is about \$48 per unit. As a result, we are going to have more than \$5 million revenue by the end of 5th year.

Marketing Strategy: We use experience-based marketing strategy. Customers need to use our product for a period to benefit from the long-term, continual monitoring features. We cooperate with health care institutes to provide free trials for our customers. We enter the market by targeting at niche customers, and then extend to larger groups. We will obtain Certification of Medical Devices (CMD) at the end of the second year to increase our market share.

Sales Strategy: We distribute our product through three channels: sales agent, online sales, and direct sales. In first two years, we mainly use sales agents and online sales. In addition, we will build up our own sales channel since the third year.

Financial Plan: Based on current analysis, in the future 5 years, we can maintain a healthy financial situation with capital investment. As a manufacturing company, we will need relatively large initial investment. But we can break even in the 3rd year of sales. With appropriate marketing strategy and product improvement, our company will have increasing market share, and then we

can maintain increasing revenue in device sales and advertising revenues. Accordingly, the company will receive increasing net profit in future 5 years.

Our Team:

Xuejing He, embedded system, wireless sensor network design.

Wei Ding, statistical data analysis, mathematics, public health

Jing Lu, bioinformatics, big data analysis, database design

Yuwang Long, information science, finance, business data service.

Wei Tian, medical instruments, project management.

Product & Value proposition

AngryPhDs will develop a solution that can passively and continually measure the blood pressure with a wearable device, automatically collect and transfer the data through the smartphone, and analyze the users health information in the Cloud system, and in return provide beneficial feedbacks to users.

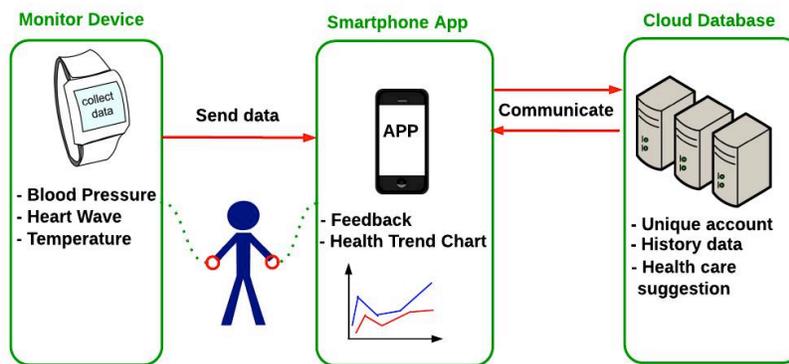


Figure 1. System diagram of HealthiStyle.

- A wearable, passive, and non-intrusive blood pressure monitor. It checks the users blood pressure once per hour.
 1. The users do not need to pay any attention to the measurement and data collection except putting the watch-like device on.
 2. The frequency of once-per-hour is best for eliminating the disturbing factors and also energy efficient, resulting in acceptable battery lifetime.
- A smartphone application
 1. Data deliver: connect to the device on Bluetooth, automatically transfer data from device, and later to the Cloud.
 2. Presenter: analysis reports are sent to the app or available on the web.
- Cloud system based data analysis.
 1. Accuracy. Multiple measurements improve accuracy, help detect the trend of the variation, eliminate the random and periodic fluctuation.

2. Data management, analysis and cloud computing. Based on the information we collect to cloud database, we analyze the blood pressure time series of individual users, estimate the trend, and make statistical inference of time that the user has hypertension. Moreover, we analyze data from both geographical and temporal perspective, since locations and temporal changing trends are both important in detecting health treats. Daily measurement results can be directly displayed by the smartphone, which is more efficient for the user to have access, and weekly or longer analysis need cloud database and computing.
3. Feedback report and advices to users. We provide curves that describe the changing of blood pressure, heartbeat rate, and body temperature over time. Curves include the real trend, an estimated regression line based on data during this time period and baseline personal information, which will also be compared with the population average to rule out the normally periodic changing. We also provide such report of curves daily, weekly, monthly, seasonally and yearly for long-term users. We also give an estimated time to hypotension for the user if his/her blood pressure has an increasing trend. Based on self-reported baseline information as well, we provide more specific health advice and relevant knowledge, to help users better understand his/her health condition.

Feasibility analysis

- Wearable nonintrusive blood monitor devices have been prototyped by a research group. This research group is one of our collaborator and are willing to share the technique.
- All elements used in the device are from existing components. They can be easily obtained from vendors.
- The smartphone application is a conventional design that does not require complex techniques. The development time is mainly for improving user experience.
- The backend data analysis is done through well-developed statistical techniques that has already been proved effective in other areas. The result of this analysis is guaranteed
- Privacy and security. We provide a unique account for each user. The health information of one user can only be viewed by authorized individuals or organizations, preventing leakage of private information. The security of wireless data transmission is guaranteed by using encrypted data transmission.

Market Summary Analysis

Market Size

From 2007 to 2010, blood pressure monitor sale in China is averagely 3.5 million units. Currently the sphygmomanometers coverage in China is only 1.2%. It is much more less than that of US (50%), which means there is large space for the blood pressure monitor market of China to grow. Our product will combine the advantage of electronic blood pressure monitor and data service, currently there are no such kind of products in Chinese market, so we can make an assumption that we can occupy 2% of the market in 5 years. In addition, the market is increasing in a rate of

10%-15%. So our market size will be about 0.12 million units at that time. Meanwhile, since our product provides services other than blood pressure tracking, and it is more convenient and less disturbing than former products, we can confidently estimate that we will have customers other than the traditional electronic sphygmomanometer customers.

Current Market

For current electric blood pressure monitors market in China, no existing product can provide both device and decision support from health information analysis:

- For traditional electronic blood pressure monitors, in 2011, OMRON occupies 68.2% market share, domestic brand ANDON occupies 4.1%, and other companies share what is left.
- For continual electronic blood pressure monitors, no product is dominant. Companies like CONTEC and AD Tech can provide continual blood pressure monitors, but their products are for clinical application, and the price is over \$500.
- For health information system provider, no company can provide complete health information solution in China. For global market, MicroSoft HealthVault and Dossia are two major providers.

Competitor Analysis

The areas of influence

For product/market level competition, one major product for HealthiStyle is blood pressure monitor. The product can automatically and continually measure, collect and track the users blood pressure, and also return feedback report and advices. No totally the same product exists in the market. To prevent new competitors entering this space, we have experts in our team to design products, and get our own patient. Moreover, with more collected data from users, we can provide more accurate feedback and advice.

The contiguous area

In China, most relevant product in the market is portable or continuously measuring blood pressure monitor. The products are oriented to patients with hypertension, especially for the old. For continual blood pressure monitor, present products are for hospital uses, and not suitable and affordable for patients. They are competing in precious measurement, product design and distribution channel. Comparing to our product, they usually dont have products related to smartphone, have interrupting measurement and do not provide direct feedback to patient.

In global market, a few existing competitor products can provide similar functions, in the table below. The products are iHealth blood pressure monitor, Withings blood pressure monitor and eScale, which are all from small companies, and they are new entrants to the US/Europe market. Marketing still will take a few years for them to educate customers in US/Europe, and now they dont have any special advantages in entering market of China. For their weakness, we will have more

powerful health information feedback than their products with more data from users. Moreover, the average price for their products are still beyond the purchasing power of most Chinese.

Table 1. Comparison between HealthiStyle and existing blood pressure monitors in China

Product Name	Price	Accuracy	Portability	Measurement	Users	Information Tracking	Information management
HealthiStyle	\$50	long term accurate	portable, on wrist	Continually	individual	predict hypertension, all measurement history	Unique account, share with doctors
Blood Pressure Monitor Package (YuYue)	\$10	not accurate	portable, on wrist	Discontinually	hospital/individual	No	No
HEM-6050 (OMRON)	\$100	accurate	not portable, on wrist	Discontinually	hospital/individual	last 100 measurements	No
CONTEC08C (CONTEC)	\$100	accurate	not portable, on arm	Continually	hospital	last 99 measurements	No
ABPM-50 (CONTEC)	>\$1000	accurate	not portable, on arm	Continually, also measure heart rate and cerebral oxygen	hospital	last 100 measurements	connect to PC by wire

* Discontinually means one time measurement; continually means frequent measurement.

The areas of interest

This part is mostly for firm-level competition from companies, which have capability of making equivalent health information management system. The representative companies are domestic RuiTel, MicroSoft and Samsung. However, they are insensitive to the changes in our target market. They have most resources to enter the market, but such products are not complementary to the products they have.

Table 2. List of firm-level health information management systems

Company Name	Resource base	Barrier
RuiTel	Phone device for old people with connection blood pressure measurement, cloud computing	Not for health information, most products focus on production of phone
Microsoft	HealthVault record stores an individual's health information, to access records for multiple individuals, other software solution support	Need to cooperate with other device manufacturer, no prompt feedback to customer
Samsung	S Health services, app distribution channel, cooperate with OMRON	No complete health information system support

Conclusion

Our products are different from existing products in the market, and have a wider range of target customers. The direct competitors are from traditional blood pressure monitor manufacturer. Our service covers the whole industrial chain from device to decision-making. So, with our service, customers can have instant feedback from the app, and other health-related companies can get our comprehensive health data analysis for population. However, unlike traditional blood pressure monitors, our products are only for individual. For device, we do not focus on precise measurement, but on long term analysis and personal feedback. There exists companies which have enough resources, but their strategy emphasizes on different area. With proper marketing strategy, we can have more broad influence and occupy the market.

Marketing & Sales

Marketing strategy (including promotion strategy)

We plan to market our product by cooperating with health-care related institutes for educating customers and selling our products, and also use online marketing.

Experience-based marketing is our primary strategy. The product features, long-term and continual tracking, require about 1~3 months before showing the benefits. Therefore, We will market our product by letting customers experience our product. This will highlight our features, differentiate our product and build customer relationship.

Our targeting market consists of two groups of people under 50 years old:

- People with clear intention in frequent monitoring of blood pressure (*“the first group”*). This group are usually with one or more diseases that are related to hypertension. They are already aware of the importance of long-term and continual detection. Therefore, the marketing goal for this group is only to promote our product.
- People that have not realized the importance of long-term and continual blood pressure detection (*“the second group”*). This group currently seem healthy, but have high risk of prehypertension or hypertension. They need to be educated on the necessity of health monitoring before we promote our product.

One important timestamp for our marketing is the Certification of Medical Devices (CMD), which is a requirement for an equipment to be used in medical care area. Hospitals can only cooperate with companies that receive this certification. Also, doctors are more willing to recommend devices with CMD. As a result, CMD is an important way to let us broad our customer. This certification requires the product to be on the market for at least two years with positive customer feedbacks. Therefore, our marketing strategies are naturally divided into two phases: before and after the certification. Before receiving the certification, we market HealthiStyle as health care equipment; after the certification, we can also market our product as a medical care device.

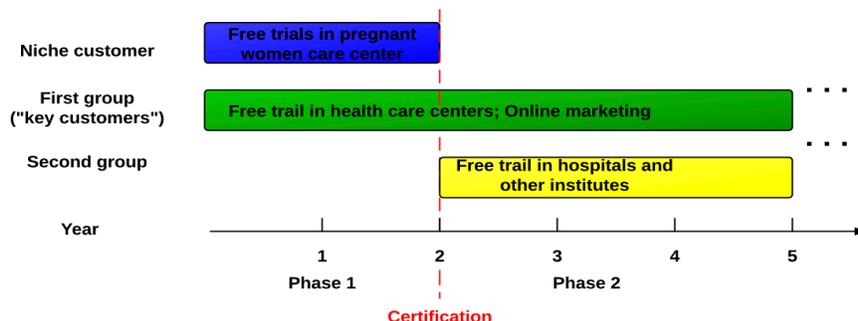


Figure 2. Timeline of marketing strategy.

Therefore, we use a two-phase marketing strategy: In phase 1 (first two years), we will only target at the first group. We will get into the market with niche customers. We provide free trial and introduction in health care institutes, and also use online advertising. In phase 2 (since the third

year), we will extend our targeted market to the second group. We will broaden our cooperation with institutes for general publics.

Phase 1 (first two years): In this phase, we have not received the CMD.

- **Kick-off: targeting at pregnant women:** We target at a group of niche customers, pregnant women. There are 11.6% percent of pregnant women with temporary hypertension. They need to lower their blood pressure. Others are also taking preventive measures. HealthiStyle is the one to save their time and effort in tracking the blood pressure. We will cooperate with pregnant women care centers in Beijing. Women going to these centers are usually ones who care about their health or have potential health problems. They largely cover our customers. Long-term free trials (3-6 months) will be provided to customers during the treatment period, allowing them to know the features of our product and service. We will closely follow these customers during their free trial period to gain feedback and data that helps us to adjust our product design and marketing strategy. This group is our niche customers that help us to get into the market.
- **cooperation with health care institutes:** After the kick-off, we will enlarge our market by taking other healthcare related institutes (including fitness centers and physical therapy centers) into account. Health care consultants and trainers will introduce our product to patients and trainees. We will provide long-term free trials (3 to 6 months) of our product there. We will closely follow these customers by providing convenient feedback channels. After learning the importance of blood pressure tracking, having user experience with our product, and seeing the results, these customers can become our “key customers” and potentially refer our product to others.
- **Online marketing:** We will build up user referral strategy in Weibo, which is the largest social network in China. This social network is a representation of offline personal relationships. Therefore, using social network is a quick and easy way for our key customers to refer our products to others.

Phase 2 (starting from the third year): In this phase, we have received the CMD certification.

- **Free trials in more institutes:** We will broaden our service by cooperating with other institutes: (1) Professional health-care centers that provide diagnosis and treatment services. Long-term trials can be provided to customers there. (2) General public area including drug stores, restaurants, bars, and footspa centers, etc.. We provide short-term trials to these customers while they visit these places.
- **Diversify our product:** Since we have gained sufficient customers in the first two years, we can diversify our product by providing several different models meeting the demand of different customer groups. We provide high-end product with additional functions. Besides targeting at individual users, we also provide enterprise health data management solutions that can manage a group of health monitors. This helps broaden our customers to high-end users and companies.

Sales strategy

We use multiple ways in our sales strategy, including direct sales, via sales agents, and online sales.

- **Sales agents (first two years):** We use sales agents as our major way of sales strategy. They target at building up cooperations with health care institutes, and selling our product in drug stores. Local sales agents in each city have connections with these distributors, and will have more employees to serve in each store to demonstrate our product. This will save us time and effort of building up such local connections.
- **Online sales (since the first year):** Online sales is another major way of marketing our product. Starting at the first year, we will open online stores in two major B2C online sales websites: taobao and 360buy. They account for over 40,000 monthly sale of blood-pressure monitors in China. Therefore, we plan to sell our products through online sales.
- **Direct sales (since the third year):** We will open direct sales entities since the third year. These entities will be distributed in four major cities in China: Beijing, Shanghai, Guangzhou, and Shenzhen. These four cities have a total population of 84 million and belong to the most developed regions in China. The entities provide direct sales and customer service.

Pricing strategy

Our major competitors: Omron and Andon health price their electronic blood pressure monitor from RMB 200 to RMB 600. Comparing to their products, our product is competitive in providing timely health monitoring and valuable data analysis. Considering our customers would be middle class, a reasonable price will make them trust our product more. So we are going to price our device the average electronic sphygmomanometers price, which is RMB 300.

Milestones

- Founders will raise personal money to build prototype, based on the prototype, the company is going to raise its initial capital. The development expense of product is estimated to be \$310,000, and the company would like to raise \$0.4 million seed capital.
- The company is scheduled to finish product development and testing in 1 year, and raises \$0.5 million for products manufacturing and marketing for the first year of sales.
- The company is expected to achieve 3,000 units of sales by the end of 1st year, after achieving that, the company is supposed to raise \$0.5 million for following development and sales.
- The company will promote product in Beijing, Shanghai, and Guangzhou in the first 2 years of sales, and achieve 10,000 units of sales by the end of 2nd year.
- The company intends to start advertisement sales after receiving CMD certification, and achieve at least \$32,500 advertisement sales.
- We project to achieve 120,000 units sales at the end of 5th year and own its sales team and sales channel.

Financial Analysis

Capital raising

The Company will need to raise money in first 3 years; we hope to raise \$0.4 million in the first year, \$0.5 million for the second year, and \$0.5 million for the third year to promote the products. All the capital raised will be used for product development, product marketing and sales.

Important Assumptions

Industry

- There is a slow-growth economy, without major recession.
- There will not be competing products that have the same features as our design.
- The company will acquire a medical equipment certification after 2 years of products release.

Market & Sales

- The Company will have a small amount of sales at the first 2 years.
- Demand of the products will increase sharply after the company acquires the certification by the end of 2nd year of sales.

Product

- The company will own its RD department, and will develop favorable product in 1 year.
- The company will release upgraded version of products each year.

Break-even Analysis

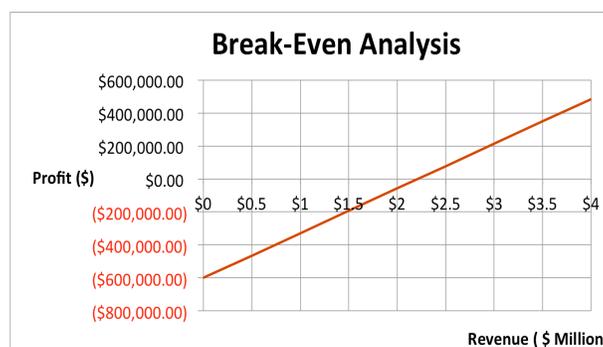


Figure 3. Break-even analysis.

The break-even analysis shows that the company has a good balance of fixed costs and sufficient sales strength to remain healthy. Based on the graph above, we will break even when we receive around \$2.1 million revenue. Our break-even point is close to 44,219 units per year, while our sales forecast for the next year calls for only 3,000 units, but our sales will increase after we receive CMD certification. So we are close to our break-even point during the 3rd year of sales.

Assumptions: The following table shows the assumptions of break-up analysis; the estimations are based on production of 10,000 units, the estimations are also referred to medical equipment industry indicators.

Table 3: Break-even Analysis

Estimated Fixed Cost	\$600,000.00
Estimated Variable Cost	
Outsourcing of Manufacture	\$15.00
Marketing & Sales (30% of Revenue)	\$14.29
Management(10% of Revenue)	\$4.76
Total Variable Cost	\$34.05
Estimated Listing Price	\$47.62
Estimated Gross Margin per Unit	\$13.57

Projected Profit & Loss

All expenses estimated in this initial plan are considered to be accurate but not firm.

The plan now projects losses in the year of product development and first 2 years of sales. This will be considered very acceptable when considered against the need to spend to introduce a new product.

3rd year assumes new sales into retail with the CMD certification on the sales into medical channel. We begin receiving revenue from advertisement sales result from increasing volumes of users. Volumes increase also due to ad and promo expenditures. In 3rd year, we are thus forecasting roll-over sales of 10,000 units.

If this is achieved, it would be a good time for management to look at a major financing other acquisitions, and an aggressive national expansion of the “HealthiStyle”.

Table 4. Income statement

Year	0	1	2	3	4	5
Units Sold	0	3000	10000	50000	100000	120000
Revenue from device sales	\$0.00	\$142,857.14	\$476,190.48	\$2,380,952.38	\$4,761,904.76	\$5,714,285.71
Revenue from advertisement	\$0.00	\$0.00	\$0.00	\$32,500.00	\$87,000.00	\$130,000.00
Total Revenue	\$0.00	\$142,857.14	\$476,190.48	\$2,413,452.38	\$4,848,904.76	\$5,844,285.71
Cost of Goods Sold	\$0.00	\$60,000.00	\$200,000.00	\$1,000,000.00	\$2,000,000.00	\$2,400,000.00
Gross Margin	\$0.00	\$82,857.14	\$276,190.48	\$1,413,452.38	\$2,848,904.76	\$3,444,285.71
Genreal Administration	\$65,000.00	\$36,428.57	\$78,095.24	\$250,476.19	\$453,880.95	\$594,285.71
Marketing & Sales	\$0.00	\$282,761.90	\$321,761.90	\$665,753.57	\$1,072,462.38	\$1,308,020.76
R&D & Maintenance	\$244,360.00	\$193,000.00	\$249,350.00	\$321,995.00	\$401,412.13	\$488,113.18
Total Expenses	\$309,360.00	\$512,190.48	\$649,207.14	\$1,238,224.76	\$1,927,755.46	\$2,390,419.65
EBITDA	(\$309,360.00)	(\$429,333.33)	(\$373,016.67)	\$175,227.62	\$921,149.30	\$1,053,866.06

* Cost of Goods Sold include manufacturing expenses and direct sales expenses

Cash Flow Analysis

In the first 3 years of the business plan, the company expects to raise working capital. From the first year of sales, the company will begin generating cash flow from cash sales. As a manufacture company, we should keep reasonable amount of cash balance to make sure it can operate smoothly.

Table 5. Cash flow statement

Year	0	1	2	3	4	5
Cash Sales	\$0.00	\$142,857.14	\$476,190.48	\$2,413,452.38	\$4,848,904.76	\$5,844,285.71
Cash Investment	\$400,000.00	\$500,000.00	\$500,000.00	\$0.00	\$0.00	\$0.00
Total Cash Received	\$400,000.00	\$642,857.14	\$976,190.48	\$2,413,452.38	\$4,848,904.76	\$5,844,285.71
Cash Spending	\$309,360.00	\$512,190.48	\$649,207.14	\$1,238,224.76	\$1,927,755.46	\$2,390,419.65
Net Cash Flow	\$90,640.00	\$130,666.67	\$326,983.33	\$1,175,227.62	\$2,921,149.30	\$3,453,866.06
Balance	\$90,640.00	\$221,306.67	\$457,650.00	\$1,502,210.95	\$4,096,376.92	\$6,375,015.37