

# Healthcare Wrist Watch for Chronic Diseases Prevention as Part of Healthcare Management in China

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**Keywords:** Chronic disease prevention; Healthcare management; Technology innovation; Healthcare wrist watch

**Abstract:** Health is intrinsically linked to quality of life, yet chronic diseases threaten them both. With an increasingly aging population and various factors that lead to health threats, chronic diseases today are growing to be the leading causes of deaths and main sources of illnesses, hospitalization, healthcare expenditures, long-term disability and productivity loss. The rise in chronic diseases in recent years amplifies the demand for access to affordable, available and high-quality healthcare. Today, people could take a more active and positive role in their own healthcare, utilizing the advanced technology. Through Healthcare Wrist Watch, it is possible to build an ecosystem with the integration of information and communications technology and medical resources, which enable people to manage their health easily. This study is to discuss and analyze the launch of a new product for chronic diseases prevention and healthcare management in China. Beginning with the introduction of the Healthcare Wrist Watch and the services, this paper will give an overview of China's healthcare management market. Then through SWOT analysis and market segmentation, adequate develop plan for launching the Healthcare Wrist Watch and services will be identified.

## 1. Introduction

Today, chronic diseases are growing to be the leading causes of deaths and main sources of illnesses, hospitalization, healthcare expenditures, long-term disability and productivity loss. According to the global status report on chronic disease 2017 released by the World Health Organization, chronic diseases kill more than 36 million people annually, which accounts for over 60 percent of the global burden of disease. The four main groups of chronic diseases like cardiovascular diseases, diabetes, chronic respiratory diseases and cancers are responsible for 80 percent of all deaths. For each year, they result in 2.2 million deaths in the United States, which means 7 out of 10 deaths among Americans are from chronic diseases[1]. A much higher portion, 88 percent of annual deaths in the United Kingdom are due to chronic diseases. Also, chronic diseases are a major cost and a profound economic burden to individual, family, healthcare system, as well as the society. The direct costs of medical resources and non-medical goods and services consumed in the treatment of chronic diseases are enormous. In the United States, total healthcare expenditures reached 2.6 trillion dollars in 2010, which translates to 17.9 percent of the nation's gross domestic product, and chronic diseases account for about three quarters of entire costs. Similarly, the survey conducted by Gallup and Health ways showed that chronic disease costs the United Kingdom 20 billion a year, estimated 70 percent of the costs that National Health Service spend on patient care[2]. Obesity alone results in over 1200 pounds in lost productivity per worker each year.

Like the other developing and developed countries around the world, China is facing significant healthcare challenges with the double burden of chronic disease. During the last decade, the number of patients with chronic disease increased 10 million annually. It is estimated that more than 260 million Chinese are suffering from chronic diseases, contributing to approximately 83 percent of all deaths each year and nearly 70 percent of the total disease burden. Figures from the World Health Organization showed that "an average of 5.7 million people die of cardiovascular diseases and

diabetes a year” [3], which amount to the entire population of a medium-sized city in China. The prevalence of raised blood pressure, daily tobacco smoking, overweight and obesity are estimated to be 38.2 percent, 26.3 percent, 25.7 percent and 5.7 percent separately. It is expected that the number of chronic diseases patients will triple or even quadruple during the next two decades, leading to the treatment burden rise by 50 percent. The analysis by the World Health Organization has found that from 2005 to 2015, the estimated accumulated losses to China are 558 billion dollars[4].

However, in fact, chronic diseases could definitely be prevented and controlled. According to the World Health Organization, “if some risk factors of chronic diseases were eliminated, at least 40 percent of cancer as well as over 80 percent of cardiovascular diseases, stroke and type II diabetes, would be prevented” [5]. Helping healthy people stay healthy is an emphasis that has been missing in today’s illness-oriented healthcare system. It can be seen that “many of the individuals with chronic diseases such as heart disease and diabetes, come from the low-risk, healthy population”, which has stressed the significance of healthcare management for preventing diseases. Meanwhile, various chronic disease management programs today mostly shift healthcare out of expensive hospitals with an emphasis on community-based care to ensure patients receive services at home. Thus, it is inevitable that the future of healthcare management industry focuses on maximizing benefits of technology. Sensor-based monitoring, telehealth data transmission and growth in mobile technology make technology-supported care in the home and community more viable. Also, telemedicine has been used as a tool to cut down healthcare costs. In China, as the Ministry of Health announced, the current healthcare system that traditionally geared towards diagnosis and prescribed treatment is undergoing reform[6]. Consequently, the demand for innovation of technology, particularly new and appropriate technologies to effectively prevent chronic diseases and further improve the quality of personal healthcare, is growing.

## 2. Overview of Healthcare Management Market in China

The concept of healthcare management was first suggested and developed as early as the 19th century in the United States called managed care, which intended to reduce unnecessary healthcare costs and improve the quality of healthcare services. During the past decades, managed healthcare has been so successful in the United States and more and more Americans benefit from it. However, in China, healthcare management industry is still an emerging industry and staying at the early stage of overall development. According to the Status Report of Healthcare Management Institutions in China, the first institution that provides healthcare management services was founded in 2000, and after that the number of healthcare management institutions has increased rapidly with the average growth rate at 52 percent each year. Until 2008, there are already 5,744 institutions that provide healthcare management services in China, located in 31 provinces and autonomous regions[7]. Among those areas, Beijing has 534 healthcare management institutions, contributing to 9.3 percent of the total amount, and nearly half of the total institutions are located in Shanghai, Guangdong, Jiangsu and Shandong provinces[8].

Table 1 Operation Model of Chinese Healthcare Management Institutions

Hospitals	Professional health screening center	Community medical service center	Third party service provider
Health screening with simple medical treatment; Few hospitals provide health risk assessment and intervention service	Health screening with health consulting and education service; Few provide health risk assessment and professional health management service	Disease prevention, medical treatment, healthcare management, planning birth, health education, physical recovering and chronic disease management service	<ul style="list-style-type: none"> <li>•IT service: health management software</li> <li>•Internet platform service: information consulting, reservation, medical instruction</li> <li>•Health products: nutrition food</li> <li>•Health check: sub-health check, gene check</li> <li>•Health intervention: energy, blood pressure, ECG monitoring</li> <li>•Healthcare service: feet and body massage, fitness</li> </ul>

These institutions are dedicated to providing a variety of healthcare services, including health screening, health risk assessment and intervention services, health education, disease management and employee healthcare management to individuals, enterprises, communities as well as the public. 41 percent of them are state owned and 31 percent are private ones. About 66 percent of the current healthcare management institutions offer health screening to more than 300 million people each year, approximately 63 percent provide disease management services and nearly 43 percent provide health risk assessments and intervention services[8]. Table 1 shows the current operation model of Chinese healthcare management institutions. (See Table 1)

According to the Chinese Medical Association, “most of the healthcare management institutions in China could make a profit, as approximately 25 percent of them earn over one million a year”. It is estimated that by 2015, the market size of health screening solely is expected to be RMB 300 billion and by 2020, healthcare management and relevant services such as health risk assessment and intervention services, health education and disease management will create an RMB 1000 billion market[7].

### 3. SWOT Analysis

Healthcare Wrist Watch is trying to provide affordable, accessible healthcare management and specialty services to the world. Through technology innovation, the Healthcare Wrist Watch and the cloud platform target to build an ecosystem to deliver chronic disease prevention solutions to individuals and families, and promote health management. The business analysis of the Healthcare Wrist Watch and the services is provided, focusing on their strengths, weaknesses, opportunities for improvement and threats to the development. (See Table 2)

Table 2 SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Creative healthcare management model               <ul style="list-style-type: none"> <li>• Technology innovation</li> </ul> </li> <li>• Sufficient technology expertise               <ul style="list-style-type: none"> <li>• High quality product</li> <li>• Broad service portfolio</li> </ul> </li> <li>• Cooperate with hospitals and government               <ul style="list-style-type: none"> <li>• R&amp;D capability</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• No Basic Market and reputation</li> <li>• Uncertain support from the third parties</li> <li>• Low utilization of electric products among the elderly               <ul style="list-style-type: none"> <li>• Low price</li> </ul> </li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>• Growing demand for healthcare management               <ul style="list-style-type: none"> <li>• Expansion of services</li> </ul> </li> <li>• Scientific digital diagnose method coving huge population</li> <li>• Problems existing in the current healthcare management companies               <ul style="list-style-type: none"> <li>• Gain strong and loyal customer base</li> <li>• Gain more market share</li> <li>• Technology development</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Intense competition</li> <li>• Unpredicted risks on market exploitation               <ul style="list-style-type: none"> <li>• Government control</li> <li>• National policies change</li> </ul> </li> <li>• Macro economy downturn               <ul style="list-style-type: none"> <li>• Emergent situation</li> </ul> </li> </ul>

### 4. Suitable Market Segment

Market segmentation, as the first step in target marketing is about dividing the market into smaller segments that could be reached more effectively with products and services that satisfy their distinct needs, characteristics and behaviors. As it is about understanding the needs of customers and developing marketing strategies, different segmentation variables should be considered to find the best way to get insight into the market structure. Thus, in order to successfully launch the Healthcare Wrist Watch and the services in the healthcare management market, geographic, demographic and benefit variables will be measured below.

#### **4.1 Geographic Segmentation.**

Various geographic units such as nations, regions, counties, cities are always the first consideration for marketers when segmenting markets. Among those major segmentation variables, density is an important factor to be measured for customer markets. Generally, the target customer base of the Healthcare Wrist Watch is chronic disease patients in China. According to the Analysis Report of National Health Services Survey in China, “the prevalence of chronic diseases of urban areas was 28.3 percent, 11.2 percent higher than that of rural areas. For urban areas, the bigger the city size is, the higher the morbidity rate of chronic diseases is, and so are the rural areas” [9]. The difference in the prevalence of chronic diseases between urban areas and rural areas might largely influence customers’ buying attitude toward healthcare management products and services. People who live in higher-density urban areas as well as rural areas in the east of China are more likely to choose Healthcare Wrist Watch and services. Hence, urban areas and rural areas of eastern China would be the main market for launching the Healthcare Wrist Watch and services.

#### **4.2 Demographic Segmentation.**

Demographic factors, as Kotler and Armstrong states, are “the most common tools for segmenting customer groups, as customer needs and usage rates often vary closely with demographic variables”. In order to assess the size of the target market and to reach it efficiently, age and gender segmentations will then be identified. For age segmentation, it has been discussed before that China has become an aged society, with about 11.4 percent of the total population over 65 by the end of 2017. In addition, the National Health Services Survey also indicates that the elderly, particularly over 60 years old in China have the highest morbidity rate of chronic diseases at 75.2 percent in 2014[9]. As for gender segmentation, the female experiences higher morbidity rate of chronic diseases than the male. But the report from World Health Organization shows that “the death rate of chronic diseases of the male is 9 percent higher than female”[3]. Moreover, male and female have the similar prevalence of some metabolic risk factors such as overweight, raised blood pressure and blood glucose. However, the prevalence of obesity and raised cholesterol of female is 2 percent and 3.5 percent separately higher than that of male[3]. In relation to that, it is considered that the services should be tailored and offered according to the different needs and preferences of male and female.

### **5. Development Plan**

Through segmenting the market, target market segments have been decided, with the emphasis on the elderly and urban population. The positioning Healthcare Wrist Watch is to deliver affordable, available and high-quality healthcare to chronic disease patients, sub-health population and health-conscious people. For successfully attract, grow and retain customers, it is crucial to develop an effective market strategy. Initially, greater expertise than competitors in innovation is the key to successfully develop and launch new products. Thus, technology innovation of Healthcare Wrist Watch is definitely the competitive advantage. Since the Healthcare Wrist Watch is dedicated to providing high-quality healthcare services to customers, it is quite necessary to establish strategic alliances with hospitals, software service and solution provider, healthcare devices manufacturer, telecom companies, banks, and insurance companies.

First and foremost, allying with first class hospitals, community hospitals, and health service stations is essential for providing healthcare services to customers, including health screening, health risk assessments and intervention service, health consulting and education service, and green channel appointment[10]. Then, working with China Healthcare Management Association and different level healthcare management institutes could help to establish an authoritative healthcare management knowledge base for the information service platform. Second, software service and solution providers and telecom companies could provide technical support to the cloud platform. Working with them enables Healthcare Wrist Watch to have better performance. Third, in order to popularize Healthcare Wrist Watch and services, it is probably viable to work with banks and insurance companies to sell the product and services to their end customers. Fourth, as Healthcare Wrist Watch is a digital

terminal that can connect and collect data from various digital healthcare sensors[11], working with the healthcare sensor manufacturers or dealers to integrate these devices for marketing would be a good way to open up new markets.

Moreover, the long-term goal for the future is more than just a healthcare terminal, more customized healthcare management services will be provided to more customers. Then more strategic alliances will be established, with governments, real estate companies, small and medium enterprises, etc. Table 6 shows the strategic development plan in the future. (See Table 3)

Table 3 Strategic Development Plan

	<b>Hospitals</b>	<b>Health City</b>	<b>Residents</b>	<b>Corporations</b>
<b>Operation Strategy</b>	<ul style="list-style-type: none"> <li>➢ working with first class hospitals to provide healthcare management services</li> </ul>	<ul style="list-style-type: none"> <li>➢ working with governments to provide healthcare services to remote regions</li> <li>➢ providing raw data and information for policy making</li> </ul>	<ul style="list-style-type: none"> <li>➢ working with real estate companies to set up health communities to provide health products and service to local residents</li> </ul>	<ul style="list-style-type: none"> <li>➢ working with telecom service operators, banks and insurance companies, etc to provide health service and devices to end customers</li> </ul>
<b>Target Customers</b>	<ul style="list-style-type: none"> <li>➢ public people (Esp. the elderly)</li> </ul>	<ul style="list-style-type: none"> <li>➢ different level governments</li> </ul>	<ul style="list-style-type: none"> <li>➢ real estate companies</li> <li>➢ community residents</li> </ul>	<ul style="list-style-type: none"> <li>➢ end users</li> <li>➢ corporations</li> </ul>
<b>Profits Model</b>	<ul style="list-style-type: none"> <li>➢ health screening</li> <li>➢ sales of terminals</li> <li>➢ service fee for healthcare management</li> </ul>	<ul style="list-style-type: none"> <li>➢ devices bought by governments</li> <li>➢ healthcare platform management and maintenance fee</li> </ul>	<ul style="list-style-type: none"> <li>➢ health solutions</li> <li>➢ devices and service sold to residents</li> </ul>	<ul style="list-style-type: none"> <li>➢ healthcare products and services</li> </ul>

## 6. Conclusion

In conclusion, with the help of technology innovation, today's people have the chance to manage their health more easily. Given the heavy social and economic burden of chronic diseases in China, it is quite necessary to build an ecosystem with the integration of medical resources and information and communications technology to provide affordable, available and high-quality healthcare to people. Healthcare Wrist Watch is a portable digital terminal which could ensure the healthcare management services will be delivered to chronic disease patients, sub-health population and health-conscious people. The SWOT analysis have given an overview of the healthcare management industry in China. Then, through marketing segmentation, the target markets of Healthcare Wrist Watch have been identified to be the elderly and the developed urban areas. In order to successfully launch the Healthcare Wrist Watch and services in healthcare management market in china, the development plan is to establish strategic alliances with hospitals, software service and solution provider, telecom companies, as well as insurance companies. Since China is a potential and profitable market, focusing on technology innovation and online promotion could enable the Healthcare Wrist Watch and services to have a prosperous future.

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