

The Industrial Layout of Smart Medical Care in the Great Health -Take Ali Health As an Example

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Abstract. Since the outbreak of COVID-19, medical resources were more and more out of balance in China. The Great Health Era was coming, depending on the development of the economy. People will pay more attention to their health and focus on the quality of their lives. The connotation and boundaries of health are also being enriched, expanded and extended. New industrial models are emerging, and there is crossover and integration between multiple disciplines, fields and sectors related to health. It's the big challenge to reforming of health care. Smart medical care has developed rapidly, thus providing more convenience to people's daily life. The next stage of development faces certain challenges. In order to better understand the layout of smart healthcare, the paper studies the smart medical care of Ali Health. The paper finds the problems of Internet smart medical care and makes reasonable suggestions, which can help the innovation of smart medical care. In the future, smart medical care will bring more convenience and service to people.

Keywords: Smart medical care, Internet medical treatment, Great Health Era.

1. Introduction

Since the outbreak of COVID-19, internet medical treatment meets people's needs depending on its unique advantages. The internet medical enterprise captures the market rapidly. During the epidemic situation, internet medical treatment can reduce human contact, lower the cross-infection and break the limit of resources and places. It brings big convenience. In addition to traditional medical institutions, Internet companies, IT service providers, pharmaceutical companies, etc. have entered the "Internet+" medical market and continue to explore the development model of Internet medical care.

Now, internet medical treatment has unfolded a competitive landscape dominated by smart healthcare. Internet healthcare changes the competition which focuses on online drug sales. Today, Internet healthcare is led by three major companies: Jingdong Health, Ali Health, Ping An Good Doctor [1]. They want to provide better services for patients. Providing more valuable services before, during and after the treatment, they can do a good job of data sedimentation. The three companies have developed unique strategies, in order to empower the diagnosis and treatment services and physical medical institutions, as well as the application of AI medical technology, to break the pure pharmaceutical e-commerce medical model.

Ali Health is engaged in Internet medicine, new retail of medicine, chronic disease management, medical artificial intelligence, epidemic prevention and popularization of science, etc. It can provide multiple solutions. During the outbreak, Ali Health used its "data + computing power + algorithm" to provide nucleic acid testing solutions for resuming enterprises on the one hand, and to improve the efficiency of testing organizations on the other hand, thus realizing the effective allocation of testing resources.

All branches of the Ali ecosystem are applying their technological longevity to healthcare, laying the foundation for Alibaba Health's new digital infrastructure. As healthcare becomes an important part of society that desperately needs to improve efficiency, Ali Health's business is being quietly upgraded.

This paper will research the system of Ali Health's smart medical care, understanding the industry layout and competitive advantage to find the internet medical care problem and provide advance.

2. Ali Health’s Introduction

2.1 Ali Health System

Ali Health is a company owned by Alibaba. Ali Health is mainly the expansion of Alibaba in the field of big health. Alibaba has made a double "H" strategy for it, which means health and happiness [2]. After the development of 6 years, Ali Health builds an Internet medical upstream and downstream industry chain. Through the e-commerce platform, Ali Health connected multiple internal resources. Its efforts to build an integrated online and offline medical and health service network.

The main players in Ali Health are Ali Health itself, consumers, drug suppliers, hospitals (medical providers), government (market supervision), and Alibaba platforms (Taobao, Tmall, Alipay, AliCloud) [3]. The relationship is shown in Figure 1.



Fig. 1 Ali Health Participant Relations (Photo credit: Original)

2.2 Ali Health Service System

Ali Health has four main businesses, pharmaceutical e-commerce as the core market, and with product traceability, intelligent medical care and health management three business lines interlinked to carry out the Internet + "medical and health services" huge platform.

The pharmaceutical e-commerce business was the main market position which is to provide users with the purchase of drugs, healthcare products, personal products and medical devices.

The product traceability business is mainly based on the example of "Code on Assurance". It can guarantee the safety of products (food and medicine) purchased for users and distributors, helps to identify the authenticity of products by recording and marking the products that enter the production and sales lines, and grasping their purchase sources and circulation information, among which the electronic supervision code is the core technology of this segment.

The intelligent medical care business is Ali Health's medical big data service project, which allows users to register through the C-side, consult online, upload prescriptions and a series of other. Smart medical is a new information technology that can build a central medical service system around the actual needs of patients [4].

And the health management business line is in order to help users record and upload test health records through the use of various health devices, and provide personalized medical services and health cycle management for users after introducing remote guidance from family doctors.

Currently, the pharmaceutical e-commerce business is the main source of revenue for Ali Health. In 2020, the pharmaceutical self-management and pharmaceutical e-commerce platform businesses contributed RMB 8.1 billion and RMB 1.2 billion. It accounts for 85% and 12% of total revenue, respectively. As shown in Figure 2. Ali Health revenue of \$9.36 billion in mid-2022 [5].

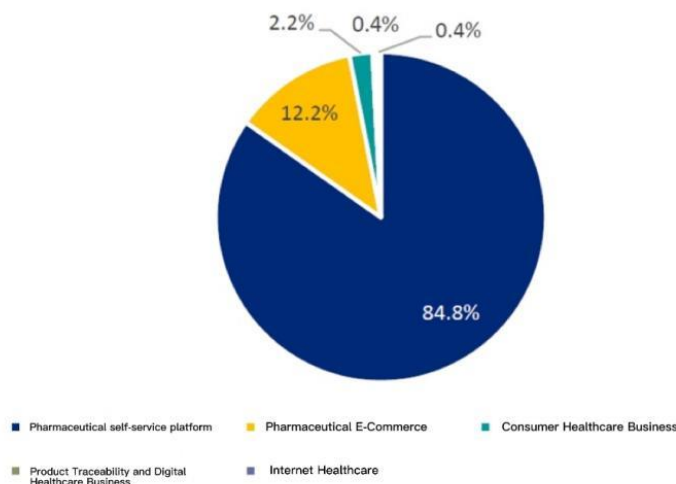


Fig. 2 Percentage of revenue in 2020 [5]

2.3 Layout: Build Platform+Expand Business

Ali health’s medical care layout is to build a platform and expand the business. What is building a platform and expanding business? People are known that Alibaba has many subsidiaries. It can take advantage of other corporations to develop other medical care businesses. For example, Taobao is to provide the entrance of traffic and provide health services for the C-side (user side). Taobao Personal Center also launched the "My Health" card. People can see a variety of services such as famous doctor consultations, adult vaccines, beauty plans, and home delivery of medicine in “My Health”. Alibaba itself has rich technical advantages and user resources, which can be well extended to the healthcare field and form synergy effects. The layout of "do extension" includes Alipay, Ali cloud, Taobao Tmall, Nail and so on.

3. Ali Health's Smart Medical Layout

3.1 AI

Relying on its advantages in big data, cloud computing and artificial intelligence technologies, Ali Health continues to explore and expand in the field of intelligent healthcare. It actively cooperates with the government, hospitals, research institutes and other external institutions. Ali Health explores the development of intelligent medical business, which is based on information technology, artificial intelligence and big data technology. The related fields involve Internet medical alliances, medical research platforms, medical education scenario simulation platforms, clinical-assisted decision-making systems, remote imaging platforms and blockchain data security solutions, etc [6].

Two years ago, Ali Health invested in "Zhejiang Bianchi", a medical big data service provider. It is the brain that carries Ali Health's data-based business. "Zhejiang Bianchi" can provide residents in the region with services including online medical appointments, registration, bill payment, personal health management and other services for the benefit of the people's livelihood.

In the medical artificial intelligence system, Ali Health has successfully developed a brain health screening AI engine. It can use AI technology for quantitative analysis of EEG, which plays a role in suggesting risk screening for depression, dementia, epilepsy, etc. And it is already in use in medical institutions. In addition, four major AI engines have been developed: digital orthodontic AI engine, epilepsy AI engine, dynamic cardiac AI engine, and slow obstructive pulmonary AI engine.

3.2 Blockchain Technology

Blockchain can help solve the core challenges of data security and patient privacy protection in the current healthcare industry. Ali Health has conducted a blockchain pilot project in Changzhou. It was the first blockchain application implemented in China based on medical scenarios [7].

Blockchain can improve the efficiency of medical care. Through blockchain technology, all the information of patients from birth to the present is stored on the chain, so that the attending physicians can know the past information of patients for the first time. The information on the chain can also be used for patients and hospitals, private doctors, pharmacies, insurance companies and other related medical and health institutions to view.

Blockchain can effectively protect patients' privacy. Blockchain technology can also give patients the highest authority to manage their own personal data, including who can have access and what information to access and the time limit of access. It can prevent personal data from malicious access, use, disclosure, damage, modification, and destruction.

Blockchain can protect doctors' prescriptions. Each Chinese medicine doctor has their own unique prescription, using blockchain can protect the doctor's prescriptions and make them tamper-proof. Ali Health is now strengthening the application and innovation of 5G and healthcare.

3.3 Digital Patient Management Model

Ali Health unveils the digital patient management model for the first time at the 2022 Digital Medicine Industry Forum in Hangzhou on September 15, 2022. It can provide a universal approach to disease management for patients and a new way for pharmaceutical companies to serve patients in the out-of-hospital market.

From patients' medication habits and extensively found that many patients have a one-sided perception of the disease. They are easily influenced by external factors. It will lead to a lack of adherence to medication and treatment, making disease management problematic.

The digital patient management model has three innovations. It decides the Community-based service solutions. Specifically, patients can precisely join the corresponding communities according to their disease and medication habits. Ali Health integrates resources to provide personalized services for patients based on the attributes of the community.

A community usually has a professional coaching team, which includes five major roles: a recovery manager, recovery ambassadors, a panel of physician experts, a professional medical team, and a nutritionist. They can provide advice to patients through live lectures, online answers and lifestyle coaching.

4. Competitive Advantages

4.1 Strong Customer Resources

Ali Health has access to a large number of users from Tmall, Taobao, Alipay, etc. Ali Health has a consistent and long-lasting customer base. Alibaba has a sticky customer base. Due to this advantage, Ali Health is more easily accepted by everyone. Ali Health raises its visibility through customers on other platforms. There will be more people using Ali Health. It's a virtuous circle. For example, Ali Health cooperates with other businesses within the group.

Ali Health has joined forces with Tmall Genie. They have launched a health voice service, which can provide users with medication guidelines, contraindications to taking medication, etc. A richer portfolio of products and services can increase the stickiness of users.

4.2 Strong Ecological and Technological Base

Ali Health has become the largest pharmaceutical e-commerce platform in China in terms of GMV in the support of Alibaba's huge user traffic and perfect e-commerce ecology. Ali Health has become a comprehensive healthcare e-commerce platform with a rich business.

Backed by Alibaba's strong technical support, Ali Health can get more data. Ali Health analyzes the data of customers to provide better services and it classifies customers precisely.

4.3 Products Can Be Traced

With the development and improvement of pharmaceutical e-commerce, drug-food safety will become the focus of attention. Ali Health has made the products traceable. This can make consumers feel more comfortable with their medication and enhance safety [8]. Medicines are special commodities. It is different from other commodities. Drugs have safety issues. This makes it imperative that they must pay attention to its distribution channels. Ali Health product traceability business is built as Figure 3.



Fig. 3 Ali Health product traceability business(Photo credit: Original)

Product traceability services are available globally, with a global GS1 standard. It is certified by the Ministry of Public Security for high-level security. Product tracing achieves full-link marketing in Taobao. Its code scanning success rate is high. And the scanning page can stay for 120 seconds, leaving enough time for customers.

4.4 Wide Product Coverage Area and Strong Supply Chain Capability

Ali Health covers three product chains: medical, pharmaceutical and insurance. The diverse needs of users on the Ali platform can be met. After years of development, the pharmaceutical self-management business, the pharmaceutical e-commerce platform business and the consumer healthcare business have become the main profit contributors to Ali Health. Ali Health continues to expand its own industry chain. This can make medical services more convenient.

4.5 Chinese Medicine Online Development

Ali Health goes live with Xiao Lu TCM, which enables online Chinese medicine consultation. Xiao Lu TCM focuses on TCM conditioning and intends to promote communication between hospitals, doctors and patients through the Internet. Chinese medicine can be helpful in the treatment of chronic diseases [9]. Ali Health has entered a partnership with SF and Tongrentang in the delivery and logistics of Chinese medicine. It can guarantee timeliness and guarantee the effect of Chinese medicine.

4.6 Online and Offline Development.

Ali Health is able to provide users with a dual closed-loop online and offline medical service and an omnichannel pharmaceutical distribution platform [10]. Online medical care is suitable for patients with milder conditions. And offline can be convenient for users to visit hospitals.

5. Suggestions

5.1 Strengthening the Layout to Build Consumer Medical

As the epidemic gradually improves, medical demand is gradually returning offline. The Internet has achieved scale expansion, with the number of active users, the number of doctors and the average number of daily consultations all showing growth. Ali Health should weaken its e-commerce attributes. It should strive to develop its medical service capabilities. Ali Health started in medicine and health. It gradually expanded its business to Internet healthcare and consumer healthcare. It is building a good healthcare ecosystem.

Ali Health can expand into consumer healthcare. It conducts medical checkups, medical beauty, insurance, vaccines and other businesses. It continues to strengthen its cooperation with upstream

companies. So it is able to match users with safe, professional and inclusive consumer medical services.

5.2 Expanding Audience and Enhance Customer Stickiness

Ali Health should expand its audience. For online visits, the majority of the population is young and middle-aged. But many older people have more needs. Ali Health can develop more businesses that can enable seniors to participate as well. For example, Ali Health can use technology to develop special watches for the elderly, so that the elderly can get the first treatment for their illness.

Ali Health, together with Founder's font, has released a font called "Ali Health Font". This is the first accessible custom font in China. It is designed to cater to all social groups. It made it accessible to different groups of people. The font is designed with accessibility in mind and aims to serve the visually impaired.

5.3 Refining and Professionalizing Prescriptions

On September 1, 2022, China issued a new 'Drug Network Sales Supervision and Administration Measures'. This regulation provides stricter rules for the sale of drugs online. Ali Health can strengthen the combination of online and offline. Ali Health should regulate the system of online prescribing and strictly controls the sale of drugs.

5.4 Building Intelligent Medical Care and Launching AI Open Platform

Traditional AI medical companies are "self-built castles" and do not share resources, technology, and channels among themselves. Ali Health decided to open up its resources and let them flow. Ali Health should enhance its digital upgrade. Digital tools can precisely target customers and provide personalized services to patients. Ali Health should continue to strengthen its digital service B-side capabilities. It provides certain support to B-side customers. Ali Health's AI Open Platform mainly provides various AI-based applications and services, and its users include doctors, researchers and developers.

5.5 Increasing Medical Sinking

Based on users' increasing demand for medical and health care, Ali Health is actively exploring the new Internet medical industry and building a "medical + medicine + insurance" closed loop [11]. In Chinese Medicine, Ali Health has partnered with Xiao Lu Chinese Medicine to promote the sinking of medical resources. In the future, Ali Health should continue to allow medical resources to sink. It brings more services and convenience to the people.

6. Conclusion

To sum up, smart medical care is based on the development background of this era of big health. It is indispensable to build a unique smart medical system, which should strengthen the linkage between online and offline treatment. Internet medical enterprises should strengthen the construction of digital infrastructure and research on artificial intelligence, 5G and blockchain when developing smart medical care. So medical enterprises effectively show the unique value and advantages of smart medical care and promote further upgrading of smart medical enterprises. Smart medical should grasp the market demand. This paper is good for people to understand the smart healthcare structure of Ali Health. People hope that the pharmaceutical industry will develop more efficiently in the future and bring more benefits to people's livelihoods.

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