Construction and Operation of Rural Medical Service Platform Based on Internet of Things Technology and Big Data Analysis

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Abstract

Based on Internet of things technology and big data, we have established a public welfare service platform focusing on rural medical care. Firstly, we introduce the main products of the service platform, namely health smart bracelet, personal health file, intelligent personal assistant, etc. Secondly, analyze the marketing principles, marketing ideas and marketing strategies of the service platform. Thirdly, analyze the financing scheme and investment feasibility of the service platform construction. Finally, analyze the risks faced by the construction and operation of the service platform and its preventive measures.

Keywords

Internet of Things Technology; Big Data; Medical Service Platform; Financing Scheme.

1. Introduction

China is a country with a large population, and medical reform has always been the main concern of our country. The advantages of medical conditions are unevenly distributed, and there is a large gap in medical level between large and small cities. With the development of Internet of things technology, give full play to the advantages of advanced medical technology and medical devices in hospitals or medical centers, realize telemedicine diagnosis and remote monitoring of patients' physical state in areas with weak medical conditions. The combination of Internet of things technology and medical equipment is the inevitable trend of medical development, which greatly solves the imbalance of medical level distribution caused by China's regional differences [1].In recent years, the transfer of labor from rural to urban has become the largest and most common migration mode in China. Children go out to work, which will inevitably lead to the absence of children role in daily life of the elderly left behind the countryside, weaken the function of family pension, and shake the foundation of family pension. Many rural left behind elderly people not only cannot meet the basic needs of the elderly, but also need to bear the heavy labor burden and the pressure brought by the cultivation of their grandchildren, and need to deal with the difficulties in production and life. How to make the old people who stay behind in the countryside have their own support and have their own support are the problems that need to be solved.

The village e-therapy project is a public welfare project focusing on rural medical treatment. The project mainly serves the left behind elderly, obtains user information through offline field collection and establishes electronic archives. Users feed back their body information to the platform in real time through wearing Internet of things devices, and the intelligent AI of the platform combines real-time data with electronic archives through algorithms, Provide users with a simple real-time physical examination, and feed back the physical status of the elderly to migrant workers in the form of data in real time, so that they can have a little understanding of the physical status of the elderly at home and prevent accidents [2].The core technology of village e-therapy project is to combine Internet of things and big data technology. Artificial AI builds a suitable model through big data analysis and learning, then replaces the Internet of things feedback data into the algorithm, effectively and timely makes simple diagnosis to the user body. The whole process takes a short time, high accuracy and provides services for users in real time and efficiently.

2. Product Introduction

2.1 Health Smart Bracelet

Smart medicine mainly includes three aspects: data acquisition, knowledge discovery and remote service. Among them, data acquisition is realized by the perception layer of the Internet of things, knowledge discovery depends on cloud computing and big data processing, and remote services are realized by means of the Internet of things and some functional medical terminal devices on the basis of the above two. Therefore, we designed the characteristic bracelet of village e-therapy to transmit data, and then combined with our electronic archives for real-time online physical examination.

In order to facilitate the real-time monitoring of users' basic body parameters such as body temperature, heart rate and blood pressure, this scheme designs a remote monitoring system based on Internet of things technology. The system is mainly composed of three parts: perception layer, network layer and application layer. The sensing layer realizes the data acquisition of temperature, heart rate, blood pressure and other parameters through the wireless sensor network. The core controller adopts STM32. Once the data is abnormal, it will generate alarm control, prompt the user and take timely treatment. The network layer is mainly composed of Internet of things gateway and cloud platform.The collected data is transmitted to the cloud platform through 4G network and WiFi through the intelligent gateway and stored. When the background needs to query the data, it can be extracted, analyzed and processed in real time. The application layer can build a monitoring platform according to the data information of the server, integrate the information resources of medical equipment, improve the real-time monitoring ability, complete the early warning of patients' physical state, and improve the diagnosis efficiency. Considering that most of the users of the bracelet are the elderly, we will reduce the weight of the bracelet and improve the durability of the bracelet. The bracelet will monitor the user's body temperature, heart rate, blood pressure and other basic physical parameters in real time, and then feed back the data to the platform through the network. The software will perform model calculation according to the user's electronic file and bracelet feedback information, so as to provide users with physical detection in real time [3].The bracelet is equipped with positioning function, which can upload the user's position in real time through the network, and the user's relatives can view the real-time position on the platform to ensure that the family is in a safe situation.

2.2 Personal Health Records

The platform will establish a site online, keep confidential records of the user's body level, medical history, medication history and family relationship, and have a real-time record of the user's body information after connecting the Internet of things equipment. The user's body data will be reflected in the way of data, so that users can understand their physical changes more effectively. The basic information of the user of village e-therapy includes three parts: basic information, health summary and health record. The basic information is composed of the user's name, age, date of birth and ID number. The health summary mainly includes blood type, drug allergy history, family history and genetic history of users; Health records include daily AI micro physical examination, hospitalization record, outpatient record, health examination and prescription information of users.

2.3 Intelligent Personal Assistant

The intelligent personal health assistant is mainly an artificial AI based on the algorithm. The platform will calculate the matching model according to many medical data, conduct real-time calculation according to the user's electronic files and the feedback data of the Internet of things, obtain the user's physical condition, and feed back to the user in an intuitive way, so that the user can understand the personal physical condition in real time. AI assistant can intelligently match the most suitable lifestyle for users by analyzing the data of users' physical conditions, and play a role in reminding users to prevent a series of diseases. The user can input the doctor's prescription scheme into the assistant. The assistant will remind the user to pay attention to medication in real time through the bracelet according to the doctor's instructions, and feed back the medication results to the assistant to prevent the user from misusing medication or forgetting medication [4].

2.4 Service Expansion

Our system launches the service of online mall module to form an O2O industrial model, which brings great convenience and better service to the experiencer. The platform cooperates with offline physical examination institutions and can recommend more reliable physical examination services to users at a lower price. Users can book offline physical examination in real time and obtain more accurate physical examination reports.

3. Marketing Strategy Analysis

3.1 Marketing Principles

(1) Customer orientation. The principle of customer orientation requires that marketing should be customer centered and service oriented. The company must investigate and study target customers in advance, clarify the real needs of customers, and provide products and services according to their needs.

(2) Mutual benefit. The so-called mutual benefit means that the transaction of products and services can bring benefits to both sides. The target customers of the "village e-therapy project" are rural residents, mostly low-income people. They should always adhere to the principle of benefiting the people and carry out relevant profit-making activities on the premise of ensuring the rights and interests of customers.

(3) Be honest and trustworthy. Honesty and trustworthiness is the basic principle of enterprise management. The company shall ensure that the product quality passes the customs, the service is in place and the relevant information during marketing is true and reliable.

3.2 Marketing Ideas

Stage 1: preparation stage - basic trust construction, collection and sorting of information.Go down to the countryside in person, collect the relevant information of electronic health records door by door, and introduce the relevant business of the company and the importance and necessity of purchasing relevant products to the villagers in the information collection stage, so as to build a basic impression of the company for the villagers. At the same time, build a harmonious relationship and basic trust with villagers through free intelligent physical examination services and related humanistic care, so as to promote later products and services.

The second stage: development stage - trial of products and services, improving the sense of experience and trust.Through the free trial of relevant medical auxiliary equipment for one month and the free experience of relevant services (such as online reservation, online medical treatment, intelligent physical examination, etc.), rural residents can better understand the use and functions of products, and help to improve their sense of experience and trust after effectively feeling products and services.

The third stage: stable stage - product service sales and stable customer source.Through the free experience of products and services by target customers in the second stage, we have accumulated a certain customer base, and provide products and services through the reasonable formulation of product prices to ensure the principle of mutual benefit and win-win results; And through communication with customers to obtain timely feedback of relevant information, so as to continuously improve relevant products and services, expand relevant business, stabilize the source of customers and continuously attract new customers.

The fourth stage: deepening stage - expanding the scope of customers and deepening the impact of products.After stabilizing the tourist sources in a certain area, we should expand the business layout and expand the scope; At the same time, according to the market status and relevant policy measures, adjust the scope of business and service, and increase the strength of product R & D and technology research and development, enhance competitiveness, improve competition barriers and deepen the influence of products.

3.3 Marketing Strategy

(1) Price strategy. Price strategy refers to the strategy that enterprises choose to attract customers and realize marketing combination through the estimation of customer demand and cost analysis. The purpose of price strategy is also to reduce unnecessary costs and expenses, transfer these expenses to product R&D; Or indirectly transfer profits to customers and employees. According to the characteristics of target customers such as "low family income and large economic burden", the company formulates more people-friendly prices to reduce the economic burden of customers, effectively protect their health and attract more customers to buy products and services.

(2) Product strategy. Through the relevant business training of products and services for marketing personnel, improve their understanding of products and services, so as to achieve better results in the promotion stage of products and services. For the design of products and services, we also conducted detailed and in-depth investigation and research in the early stage, provided products and services in combination with customers' electronic health file information and family status, and helped customers use products safely and economically; Through the simplified design of the online mall page, customers can more quickly master the use methods, understand relevant services and achieve personalized medical services.

(3) Channel strategy. Marketing channel is an important part of the whole marketing system, which is of great significance to reduce enterprise costs and improve enterprise competitiveness. Based on the principle of convenience and diversity, marketing channels attract customers to pay attention to products and increase trust through cooperation with various parties.

(4) Promotion strategy. The promotion strategy includes supplying what they need, stimulating what they want, giving in to what they like, adapting to what they want, making up for what they lack, explaining their doubts, solving their difficulties, taking them by surprise and stimulating what they want, that is, the company's marketing is required to specifically meet the needs of customers, stimulate their potential needs, pay attention to the market dynamics in time, and aim at the "vacancy" of out of stock products in the market, Through effective measures to remove customers' doubts about products and services, strive to establish business reputation, and constantly innovate marketing methods, so as to achieve unexpected results and use customers' consumption psychology to sell products and services.

3.4 Marketing Promotion Plan

3.4.1. Online Promotion Scheme

In the era of Internet big data, online publicity and promotion can greatly reduce costs and improve results. By promoting the service content of the platform, drive product sales, and then promote brand image and corporate culture.

(1) The official account of WeChat, micro-blog. Through the opening of the "village e-therapy" WeChat official account and official micro-blog account, we publicize our products and services, and set up relevant staff to carry out daily business activities, and answer relevant information about customer consultation.

(2) Large website advertising. Take advantage of the wide range of users and large traffic of large websites to put a certain number of advertisements to improve exposure.

(3) Short video promotion.In recent years, the wave of live broadcasting with goods has swept through, and has a very comprehensive and reliable experience to learn from. Since migrant workers are in the youth and middle-aged stage and are willing to accept new things by watching short videos, this method is adopted in order to introduce products and services through live broadcasting to arouse the desire of this part of the population to buy products and services for the rural elderly.

3.4.2. Offline Promotion Scheme

(1) Promotion for third-party medical institutions. Due to the industrial nature of medical institutions, it is difficult for them to easily accept products and services that have not yet had strong brand value. Therefore, sufficient preparations need to be made for the publicity of this part and prepare for a

"protracted war". Through business negotiation, the project can be displayed with the management of medical institutions to explain in detail the design concept and use method of products and services, as well as the relevant economic and social benefits, and persuade the third-party medical institutions to reach cooperation through practical and reliable analysis. Through the free trial stage in the early stage, they can increase their understanding and trust in products and services, and further improve and perfect products and services in combination with their feedback after experience, until they are approved by a third-party medical institution for large-scale investment [5].

(2) Offline promotion facing customers. Promotion of information collection of electronic health records in the early stage. In the early stage of household by household e-health file information collection, briefly introduce relevant products and services to build a preliminary impression for customers.Publicity by official media or institutions. Since the full outbreak of the epidemic at the end of 2020, China has paid more and more attention to medical undertakings. The goal of building a well-off society in an all-round way is to make the party and the governments pay more attention to the development of rural medical undertakings. Most rural residents believe in local regular TV stations, relevant newspapers and other media, so they can use this feature to choose to cooperate with such media to improve awareness and achieve good publicity and promotion effect.Health lectures or consultation and free clinic activities. The reason why rural residents choose not to see if they are ill is not only due to the problem of family economic burden, but also due to their "hide their ears and steal their bells" psychological state, believing that they will not be ill as long as they do not go to the physical examination. Therefore, by carrying out relevant health lectures, we can change incorrect psychology and establish correct ideas. Through regular consultation and free clinic activities, solve doubts and answer doubts for rural residents, send humanistic care, improve their trust in the company, and better publicize products and services.

4.   Financial Analysis

4.1 Financing Scheme

(1) Contribution from entrepreneurial members. The initial core members of the team are 5 college students. The five members can each contribute 100000 yuan, accounting for 16.7% of the total financing, as the project start-up fund to maintain the early operation of the project. When the project is profitable in the later stage, dividends can be distributed according to the proportion of capital contribution.

(2) Apply for college student entrepreneurship loan. The state strongly supports college students' Entrepreneurship and gives them a lot of support in terms of capital and taxation. According to relevant laws and regulations, borrowers who meet the loan requirements due to entrepreneurship or re entrepreneurship can obtain a single loan support of up to 500000 yuan according to their personal resource status and repayment ability; At the same time, a variety of preferential and subsidy policies have been issued for self-employed college students. After reasonably evaluating the application conditions of the team, optimistic is expected to apply for 500000 yuan of venture loan, accounting for 16.7% of the total financing.

(3) Seek government cooperation funds. Firstly, the healthy China 2020 strategy points out that by 2020, China should establish a relatively perfect basic medical and health system covering urban and rural residents, achieve the goal of everyone enjoying basic medical and health services, promote the equalization of the utilization of health services, and greatly improve the health level of the whole people. However, there are still major medical problems in most poor villages. Our "village e-therapy project" aims to build a rural private medical platform in a direction and goal in view of the shortcomings of rural medical treatment. Secondly, if the project develops smoothly in the early stage and gradually expands its scale with the help of the profit model in the medium term, it can be envisaged that the operation nature of the company will change to semi public welfare in the later stage, and cooperate with the government to contribute to the rural medical construction and the sense

of medical access of farmers. It is expected to obtain 1 million yuan of government funds, accounting for 30% of the total financing.

(4) Angel investment. Angel investment is a form of equity capital investment. It refers to people with certain net wealth who make early direct investment in high-risk start-ups with great development potential. Rural medical construction is still a blue ocean field. With the support of Poverty Alleviation Policies, it has broad market prospects. The project has the advantages of large development space, simple initial mode, strong feasibility and technical support. It is predicted to raise an angel investment of 1 million yuan, accounting for 30% of the total financing.

4.2 Use of Funds

Following the development law of things and the gradual process of the company's operation, we divide the use of funds into three stages: early stage, middle stage and late stage.

4.2.1. Early stage capital investment and cost management

The team's early goal is to develop an electronic health file management system, which can make the user's medical records electronic. Then, the user electronic medical records can be established by establishing the site publicity and visiting from the door to the house in the towns and towns at all levels. This stage is mainly the choice of office location, initial Township site rental, purchase of basic settings, manual visit fees and other operational measures. The details are as follows: in order to save cost effectively, the team decided to apply for the establishment of an office in the school entrepreneurship incubation base of Anhui University of Finance and economics. Besides large hardware such as desk, the computer and stationery members will bring it with them. After collecting data, we will first choose a suitable Township Health Station as the trial operation object, and pay a certain fee monthly as the rent return on the basis of effective communication. It is necessary to collect user information by visiting or using free physical examination activities to support users.

In the early stage, we need to open the popularity of the project, so it is necessary to publicize online and offline. Due to the small scale at the initial stage of the project, online users can find well-known social networking website bloggers to help publicize; Offline publicity is carried out by means of visits and advertising signs in township public transport to expand its influence. Since we need to store user data with the help of the Internet platform, the monthly maintenance fee of the platform is a major expense.

4.2.2. Medium term capital investment and cost management

The medium-term goal of the project is to realize the sharing of health status among families through the popularization of Internet of things medical devices, such as smart bracelets, and realize health self-test; At the same time, the team will cooperate with rural health stations and other medical institutions to connect users, doctors and medicine through data, so as to reduce the difficulty and diagnostic accuracy of rural medical treatment. At this stage, the company is in a period of development, the business scope is effectively expanded, and the operating cost is significantly increased. The details are as follows:

In order to avoid the bottleneck period of project development, we need to strengthen publicity at the stage of connection between the early stage and the middle stage, so as to make the popularity of the project proportional to the cost. Tiktok and Kwai has accumulated small scale reputation in the early stage. At this time, we aim at the characteristics of our service objects, the rural elderly, and combine the characteristics of the information age, cooperate with the short video platform such as Tiktok, Kwai and so on, strive for the headline advertisement, and expand the popularity rapidly.

The idea of introducing smart products into the factory is similar to that of self-test; After collecting user information, we need to carry out formal cooperation with rural health stations, introduce medical and medical staff resources, and realize the original intention of the project to help rural medical treatment. All these require certain operating expenses.

The rapid development of the company in the medium term is bound to bring a rapid increase in labor costs. The five people in the initial team are not enough to cope with the development of the company.

We need to attract corresponding technical talents to participate in the operation of the company with salary and treatment. It is planned to expand the team to 15 people in the medium term, so an additional 10 people need to be recruited and additional infrastructure needs to be purchased.

4.2.3. Later capital investment and cost management

In the later stage, the goal of the project is to strive to launch services such as health doctors, health malls and health insurance after accumulating a certain number of users on the platform, and provide personalized services for all kinds of people. Therefore, in the later stage, our main expenses are platform maintenance and technology development. In addition, financial expenses such as personnel wages, transportation expenses, travel expenses Business entertainment expenses will also increase with the expansion of the company's scale; At the same time, maintain the established publicity scale.

We will refinance and reinvest according to the market conditions and the development needs of the company. It is preliminarily estimated that under the condition of good market prospect, we will expand the equity structure and plan to absorb 10 million venture capital and 10 million government investment respectively. The specific share capital structure will be formulated according to the company's profit and development.

4.3 Future Profit Forecast and Analysis

Village e-therapy project is a new project proposed by Jianfa team based on big data platform and combined with 2020 "healthy China" strategy to effectively improve rural medical conditions. After the early start-up and trial operation stage, there are mainly the following profit methods and models:

4.3.1. Smart Bracelet agent

(1) The way to make money. Cooperate with the factory, sell agents as smart Bracelet (human health data monitoring tool), earn certain agency fees. Taking the smart bracelet of the agency factory as the starting point is the first way to make profit. According to the development goals, we will initially collect the data of users in the form of door-to-door visits and organization of physical examination in villages and towns; After entering the stable period of development, in order to save the cost of human and material resources effectively, we need to help collect the physical data of users with the help of intelligent tools. At present, the intelligent instruments which can monitor the physical fitness data of human body are mostly intelligent monitoring bracelets and have various production brands. Through market research and field factory visit, on the premise of ensuring quality, we choose to cooperate with the factory as an agent platform to sell testing instruments to villagers at targeted sites.

(2) Details of profit. According to the effective market research, the sales price of the existing intelligent detection Bracelet in the market is 200-5000 yuan and the brands are different. Considering that the platform service object is the rural left behind elderly, the team will cooperate with the small brand Bracelet production factory with mature production technology and a certain scale, and the price is set at about 200 yuan. Conservatively estimated that, according to the cost price of 80 yuan / piece, the net profit of the factory is 150% for each hand ring sold; As an intermediary platform, we bring fixed buyer flow to the factory, from which 30% of the Commission is drawn, namely, we can get 36 yuan for selling a bracelet. Take the rural areas of Anhui Province as an example: According to the statistical data of 2019, the rural population of the province has reached 28.1311 million. It is optimistic to assume that it occupies 1/2 of the market, and 1/4 of the people in this 1/2 market buy healthy bracelets. According to the total price = unit price * sales quantity, we can make a short-term profit of 112,524,000 yuan through the agency of bracelets.

4.3.2. Online pharmacy mall agent

(1) Profit mode. With the idea of selling bracelets by agents, our preliminary idea is that after obtaining the drug sales qualification license, the platform will reach cooperation with some online pharmacies to bring the flow of buyers to the pharmacy through the data drainage of platform users, from which the platform will draw a commission.

(2) Profit possibility analysis. According to the data, from 2013 to 2019, the sales scale of online pharmacies in China reached 75% (due to the low base), and the penetration rate of pharmaceutical

e-commerce also continued to increase. However, the sales categories of online pharmacies are mainly health care, equipment, etc., of which the sales scale CAGR of drugs is only 50%. On the whole, the online sales of the whole drug terminal (including OTC) will reach 13.8 billion yuan in 2019, accounting for about 0.7% compared with about 190 billion yuan. At the same time, the offline retail terminal (about 390 billion), accounting for only 21% of the whole drug terminal. The incremental market brought by the outflow of hospital prescriptions and the separation of medicine is the largest industry increment online or offline in the future. At present, the drug market is far from the point of contention between online and offline. We should look forward to the nearly trillion market expected to be added after the accelerated outflow of hospital prescriptions. According to the Research Report on the market operation situation and development trend of China's pharmacy industry from 2020 to 2026 released by Zhiyan consulting, in January 2020, affected by the outbreak of the epidemic, the sales volume of chronic disease drugs on the online platform increased significantly month on month, and multi category prescription drugs have occupied a certain share in the sales of B2C channels, It is expected that the future pharmaceutical retail model will be an online and offline integration model driven by patient data.

4.3.3. Software value added services

(1) Profit mode. If a mature app wants to have the power to run for a long time, it must have strong financial support, and the member value-added project is one of the important ways to obtain the operating funds of the platform. The later operation goal of the team is to launch services such as "health doctor", "health mall" and "health insurance" after accumulating a certain number of users on the platform, provide personalized services for all kinds of people, and strive to make users more convenient to use the highest quality health and medical resources - the development of member services is consistent with the development goal of the team.

(2) Profit details. Considering the rural income level and consumption concept, the value-added services for members of the platform are set at 6 yuan / month and charged annually; Assuming that 0.01% of users in the later stage of the platform open member services every year, there will be a net profit of 1.2 million yuan per year.

4.3.4. Advertising implantation fee

Once the popularity of the project is opened, it will have high exposure. It is predicted that a certain number of advertisers will negotiate and cooperate with us. At present, APP advertising implantation in the market is charged according to the number of clicks, registration and activation. Assuming that 5000 users click on advertising every day, 1% of them will register and activate. One click brings 0.5 yuan revenue to the platform, and one activation brings 1 yuan revenue to the platform, the total annual revenue is expected to be about 1 million yuan.

4.3.5. Data service

(1) Profit mode. As a semi public welfare project, we will cooperate with local health stations in order to bring benefits to rural people's medical services. As a technical platform, we provide user data and bring traffic; The health station provides basic professional medical resources. The health data analysis reports we provide for institutions are divided into standardized reports and customized reports. In the early stage of accumulating users, the report will not be charged, and the number of users will be accumulated to a certain extent, and then the report will be standardized and customized according to the actual situation.

(2) Profit details. Because the service object is rural people, the user standardized report is provided free of charge; the quarterly customized report is for VIP users of the platform: 500 yuan / copy, 1000 copies are sold each quarter, and the annual income is expected to be 2 million yuan. It is divided into health stations in a ratio of 1:1 for the operation and maintenance of rural health stations, with an annual net income of 1,000,000 yuan.

4.4 Investment Feasibility Analysis

It can be seen from the operating costs, sales revenue and profit and tax estimation table in the next five years that the project is expected to obtain a cumulative sales revenue of 131.3 million yuan and a cumulative net cash flow of 33.4 million yuan by the end of the fifth year.

4.4.1. Net present value analysis

Net present value (NPV) = present value of future net cash flow - present value of original investment

When calculating the net present value, the future cash flow of the investment project shall be discounted according to the predetermined discount rate, which is the minimum investment return expected by investors. The NPV is positive and the scheme is feasible, indicating that the actual rate of return of the scheme is higher than the required rate of return; If the net present value is negative, the scheme is not desirable, indicating that the actual rate of return on investment of the scheme is lower than the required rate of return. When the net present value is zero, it means that the investment return of the scheme just reaches the required investment return. Therefore, the economic essence of NPV is the residual income after the return of investment scheme exceeds the basic return.

According to the calculation formula

$NPV = \sum I_t /(1+R) - \sum O_t /(1+R)$.

Where, NPV—net present value; I_t—Cash inflow in year t; O_t—Cash outflow in year t; R—Discount rate; n—Life cycle of the investment project.

Assuming a one-time capital investment of 3 million yuan at the initial stage of the project, the project cycle n = 5, the calculated net present value is far greater than 0, the annual rate of return of the project is higher than the required rate of return, and the investment scheme is feasible.

4.4.2. Internal rate of return analysis

Internal rate of return, also known as internal rate of return and internal rate of return, refers to the discount rate when the future annual net cash flow of the investment scheme is discounted so that the obtained present value is exactly equal to the present value of the original investment, so that the net present value is equal to zero.

According to the cash flow statement, the interpolation method is used. The first step is to calculate the present value coefficient of annuity. Annuity present value coefficient = initial investment amount/ annual net cash flow. Step 2: calculate two discount rates (a% and b%) close to the present value coefficient of the above annuity. Step 3: according to the above two adjacent discount rates and the obtained annuity present value coefficient, the internal rate of return of the investment scheme is calculated by interpolation method. The calculated internal rate of return is 29.7%, which is higher than the cost of borrowed funds and 10% - 20% higher than the average depreciation. It is financially feasible and the investment scheme is feasible.

4.4.3. Static investment payback period analysis

Static investment payback period is the time required to recover all the investment with the net income of the project without considering the time value of capital. The static investment payback period can be calculated according to the cash flow statement, and its specific calculation can be divided into the following two cases:

If the net income (i.e. net cash flow) of each year after the project is completed and put into operation is the same, the calculation formula of static investment payback period is as follows: $P_t = K/A$.

If the net income of each year after the project is completed and put into operation is different, the static investment payback period can be calculated according to the cumulative net cash flow, that is, the year when the cumulative net cash flow in the cash flow statement changes from negative to positive. The calculation formula is:

P_t = the number of years in which the cumulative net cash flow begins to appear positive - 1 + the absolute value of the cumulative net cash flow of the previous year / the net cash flow in the year in which the cumulative net cash flow appears positive.

According to the cash flow statement, t=3.92 years is calculated. The analysis shows that the investment payback period of the project is high, the internal rate of return is high, and the investment scheme is feasible.

5. Risk Analysis

5.1 Market Risk

5.1.1. Market acceptance of the project

In view of the fact that the "village e-therapy" project is aimed at the middle-income villages in China, the income level and consumption concept of rural residents are important considerations for us to successfully open the market and obtain effective profits. According to the relevant data collected, the per capita disposable income of farmers has shown an increasing trend in recent ten years; Moreover, the consumption structure tends to be rationalized, and the consumption expenditure for entertainment, medical treatment and other aspects has increased significantly. However, it still needs a process to be accepted by the market in a short time.

5.1.2. Fierce market competition

According to AI media consulting data, the number of mobile medical users will reach 635 million in 2020. According to the report on China's Internet medical industry in 2020 released by Fastdata pole, the peak monthly live users of online medical services in 2020 exceeded 60 million, and online medical services have become an important form of medical services. The demand for online medical services increased sharply in 2020. Under the influence of the epidemic, people's demand for medical e-commerce and internet medical platforms further increased, promoting the rapid growth of user scale. In the future, online medicine will tend to be normalized.

At present, there are well-known online consultation platforms, such as JD health, good doctor online, doctor Baidu, doctor Chunyu, etc. Although the "village e-therapy" project is a rural oriented Internet medical platform, which has its particularity and irreplaceable, the risk of market competition can not be underestimated.

5.1.3. Low barriers to entry

Entry barrier is an important factor affecting the market structure. It refers to the degree to which existing enterprises in the industry have some advantages over potential enterprises and new enterprises that have just entered the industry. There are many reasons for the formation of barriers, mainly including economies of scale, the amount of necessary capital and buried costs, product differences, absolute costs, the strategic prevention of enterprises existing in policies and laws, and so on.

Although the medical model of designated village + Internet platform is relatively novel and has broad prospects, its industry entry barriers are low and there are considerable potential risks.

5.2 Technical Risk

The successful development of excellent platform is inseparable from excellent design and technical team. The technical level and cognitive standards of all team members determine the status of the developed software. At the initial stage of project implementation, we mainly employ technicians and external personnel, but there are still certain technical risks. With the progress of the project, the level of technicians must be continuously improved, otherwise it will be difficult to meet the different requirements of products at different times.

5.3 Policy and Legal Risks

(1) Privacy issues of user physical fitness data collection. *Article253-1* of the criminal law stipulates that any functionary of a state organ or a unit of finance, telecommunications, transportation, education, medical treatment and so on, who, in violation of state regulations, sells or illegally provides to others citizen personal information obtained by his unit in the course of performing his duties or providing services, if the circumstances are serious, shall be sentenced to fixed-term imprisonment of not more than three years or criminal detention, He shall also, or shall only, be fined.

The uniqueness of the "village e-therapy" project lies in its combination with the Internet of things, the use of intelligent technology to collect user data and carry out targeted medical services, but the right to privacy will inevitably be involved in the collection of user physical data.

(2) The problem of obtaining the agency qualification certificate of online pharmacy. Online pharmacies must be established on the basis of physical pharmacies and have "qualification certificate of Internet drug trading service organization" and "qualification certificate of Internet drug information service" in order to sell drugs online. Otherwise, it may constitute the crime of illegal business operation. At present, online pharmacies can only buy over-the-counter drugs, and prescription drugs must be purchased in physical stores with the prescription issued by doctors (Legal basis: Article 225 of the criminal law of the people's Republic of China).

5.4 Construction and Operation Risk

At the beginning of the establishment of the company, the capital, talents and technology were not in place. Compared with the experienced technicians, the operation and management personnel are fresh graduates. We lack effective management experience and are prone to management mistakes. As a blue ocean field, the internet medical field has limited examples that we can learn. The internal management structure of the company was not perfect at first, which had a certain impact on the overall efficiency. In terms of management and operation, the company will face more risks.

5.5 Financial Risk

Combined with the analysis of the forecast financial statements, our funds were raised by all parties at the initial stage of the project, and the cash flow was not stable enough. In terms of cost, technology development expenses and management and operation expenses increase year by year; Due to the fierce market competition, the proportion of marketing and publicity expenses is high, and the terminal cost price is high at the initial stage of construction. In terms of revenue, the project will not bring profits to the company at the initial stage due to various reasons such as nature and operation strategy. It is conservatively expected that it will be in a state of loss in the first three years, and there are certain risks in cash flow balance.

5.6 Risk Response Strategy

(1) Increase the nature of semi public welfare. The development of anything should be traced back to its fundamental source. Whether an enterprise makes progress or not and how to make progress need to be comprehensively considered and analyzed according to the nature and positioning of the enterprise "village e-therapy" is aimed at the rural people, trying to increase the rural people's sense of medical access and solve the problem of "difficulty in seeing a doctor". If we want the rural people to accept and use our new platform, we need to cooperate with the local government to increase the semi public welfare nature of the project, give more benefits to the people, gain the trust of the rural people, and make it relatively easy to enter the market.

(2) Equipped with high-quality talents the operation of the "village e-therapy" platform is of great significance. It must be equipped to ensure the quality and quantity of personnel. Many works such as public relations, financial management, technical support and project publicity, need the support of high-quality managers, technicians and marketing personnel.

(3) Strengthen operation management capability. In terms of operation management, we need to: formulate standardized daily management system and do a good job in human resource planning; Formulate the salary reward system for special periods and increase the reward for employees with outstanding performance. Do a good job in all aspects of public relations: according to the business development objectives and progress, do a good job in channel planning and strictly manage channels to meet the needs of high-quality services such as project marketing, data collection and consultation; Pay attention to staff training and learn from cutting-edge Internet medical companies.

(4) Focus on the balance of cash flow. Accurately estimate the investment scale and progress of the project and prepare funds in time; Consider the possible significant changes in income, cost and

expected value, so as to make accurate and safe planning for financial cash flow; Prepare early for possible cash flow shortage.

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