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Research on the Development of the Big Health Industry in the Context of Digitalization

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Abstract: This paper makes an in-depth study of the status quo and trend of the development of the big health industry under the background of digitalization, aiming to explore ways to promote the transformation, upgrading and sustainable development of the big health industry through technological innovation and policy guidance, and provide valuable references for the government, enterprises and universities and other stakeholders to promote the high-quality development of the big health industry in the digital era.

Keywords: Digitization; Big health industry; Development research

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1. Introduction

In the opinions of The State Council on implementing the Healthy China Action, it is pointed out that to give priority to prevention, place prevention in a more prominent position, and effectively deal with the current prominent health problems, it is important to take effective intervention measures and detail the implementation of the Outline of the Healthy China 2030 Plan on popularizing a healthy life, optimizing health services, and building a healthy environment. Focusing on the major diseases and major problems affecting people's health at present and in the coming period, we will carry out medium- and long-term actions for disease prevention and health promotion, improve the system that puts prevention first in the whole society, and make unremitting efforts to promote it, so that people will not get sick, get sick less, and improve their quality of life. It can be seen that the state exerts great importance on healthy development, and colleges and universities should also take the road in line with the development of the country to promote the development of the health industry.

2. The significance of research on the development of large health industry under the background of digitalization

2.1. Leading the innovation of medical and health service models and creating a new era of wisdom and health

With the continuous development of advanced technologies such as big data, cloud computing, and artificial intelligence, intelligent and personalized precision services have been realized in all aspects of improving the efficiency and quality of medical technical services, prevention, diagnosis, treatment and rehabilitation. Patients can also enjoy more convenient and efficient medical services through electronic medical records, telemedicine and intelligent diagnosis systems, and doctors can make more scientific diagnoses and treatment decisions according to the consultation and participation of patients, so as to make the big health industry develop in the direction of intelligence, create a new era of intelligent health, and provide the foundation for the development of the big health industry [1].

2.2. Promoting the optimization and upgrading of industrial structure and promoting high-quality economic development

As an emerging strategic pillar industry, the major health industry covers a wide range of fields [2], including medical devices, healthcare products, and health management services. The big health industry not only drives the development of the industry, but also the collection of information technology, giving birth to the development of online diagnosis and treatment, medical data analysis, medical e-commerce, and other forms of business, which not only brings a huge market development space for the big health industry but also makes the big health put its development vision in other fields. According to the development of Great Health, the government can provide certain policies to encourage the development of Great Health in many ways, so that Great Health can develop further and deeper so that health care can better serve the people.

2.3. Strengthening international cooperation and exchanges to enhance national health competitiveness

The wide application of digital technology not only breaks the geographical restrictions, enables the efficient integration and sharing of global health resources, provides a broad stage for international health science and technology innovation and industrial cooperation, further strengthens transnational research and development cooperation, promotes health service trade, and enables China's major health industry to not only develop itself, It can also develop based on drawing on international advanced experience and technological achievements, to better enhance the ability of independent innovation, improve its position in the international market, and enhance the soft power of national culture [3].

3. Strategies for the development of a large health industry

3.1. Data security practice: Teaching exploration of building a comprehensive privacy protection system

The university actively responded to the call of national data security and privacy maintenance. It cooperated with a comprehensive health management company to build a safe and efficient data management system [4]. Colleges and universities can be led by teachers to participate in the project. When participating in the analysis of users'

health status, they can directly replace the identity information (such as name and ID number) with a randomly generated unique identifier to ensure that the original data is analyzed and utilized without being identified. Also, the participation of students and teachers to establish a strict data access rights management mechanism, so that teachers and students feel that this is based on the role and attributes of the allocation of access rights, only through strict identity verification of medical professionals and researchers can access the corresponding sensitive data. There will also be a health data inspection module, which not only oversees the collection, storage, sharing and use of data but also conducts regular security audits of the system (checking the effectiveness of data encryption measures, the integrity of access logs and the implementation of emergency response plans). In addition to the above, university faculty and students also participate in regular data ethics training activities, so that the smooth implementation of the project and staff awareness of the importance of data privacy must be sufficient. The teachers asked the students to write an experimental harvest report according to the project they participated in. Some students wrote in the process of implementation of the project, deeply experiencing the risk of data leakage, data access should be carried out in a safe and controllable environment, raw data should be processed based on law, and any form of abuse and improper handling should be resisted. The teacher led the students to participate in the data desensitization technology, strict access control, independent data supervision, data ethics education and other measures in the project so that the students could more clearly understand the importance of building a comprehensive and multi-level data security and privacy protection system, which can not only ensure the personal health information security of login users, but also set a model for the development of the health industry [5].

3.2. School-enterprise cooperation to build a healthy ecosystem: Practical exploration of user participation

Colleges and universities can cooperate with enterprises to establish a simulation base so that the person in charge of the project in the enterprise can come to the university to teach. The staff of the enterprise chose a health ecosystem that combines user participation and feedback mechanism so that students can understand that the digital health services provided should not only be close to the actual needs of users but also improve the user experience [6]. First of all, the project leader divided the students into different groups, each group of 4–5 people, asked the students to investigate and collect users' opinions and suggestions on the existing digital health services through online searches and visits, and summarized them. There are questions about personal information protection measures raised by users and detailed records of students' answers. The system uses data encryption technology, an anonymisation process and strict data access control, and these are in line with the requirements of laws and regulations [7]. Secondly, to deepen users' understanding of digital health services, the project leader also asked the students to tell the interviewees during the survey that they would set up a live lecture, which would explain the basic knowledge of health services, use skills and how to manage personal health through digital tools so that users can have a better use of health management system and learn to make an appointment with a doctor by themselves. To deepen their understanding of digital health services [8]. Finally, enterprises can also let students learn basic computer operation, smartphone applications, network security awareness and other aspects, so that students first have a good understanding of it, and then spread it, which can stimulate their interest and confidence in digital technology so that they can become ambassadors for promotion. In building a comprehensive user participation and feedback mechanism, and carrying out a variety of educational activities, users' satisfaction and participation in digital health services can be better enhanced, and the popularization of digital skills can be accelerated [9].

3.3. Government-led development of digital health industry: Policies and regulations and strategies for collaborative innovation

Today, with the continuous development of digitalization, the big health industry has also ushered in unprecedented changes. To ensure its healthy development, the government should adopt a series of forward-looking policies and regulations to better promote the development of big health [10]. The government can set up an inter-departmental working group composed of experts from the health sector, science and technology sector, economic sector and law sector to study and draft policies and regulations for the digital health industry. While deeply analyzing the current development trend of digital health services, it also needs to listen to the opinions of industry experts, scientific and technological innovation enterprises, medical institutions and the public to ensure the scientific and democratic nature of policy-making [11]. For example, in the AI-assisted diagnosis system, the policy stipulates the accuracy standard of the system function, the principles of data use and protection, and the responsibility traceability mechanism to ensure the accuracy and safety of the technology application. For telemedicine services, the policy can clarify the qualification requirements of service providers, service processes, and the protection of patients' rights and interests. It can also cooperate with the science and technology industry to establish a digital health industry innovation research center to explore policy innovation and scientific and technological innovation of the digital health industry. It can also provide tax incentives, financial support, talent introduction and other aspects for digital health service enterprises to stimulate the innovation vitality of enterprises and accelerate the popularization and optimization of digital health services. Moreover, it can strengthen exchanges and cooperation with the international community, learn from advanced international experience, and constantly improve the international competitiveness of the digital health industry in China. In the research on the development of the large health industry under the digital background, the government provides a solid policy guarantee for the steady development of digital health services and the development of school talents by formulating forward-looking policies and regulations [12], establishing cross-departmental cooperation mechanisms, and encouraging the collaborative innovation of policies and technologies.

3.4. Colleges and universities should build a digital talent training system for the big health industry

Colleges and universities can add the major of "Health Information Management and Information System" according to the needs of the society for health. In the course design, the knowledge system of multiple disciplines such as basic medicine, public health, information technology, data analysis and project management can be integrated by combining theory and practice, so that students can master the collection, processing, analysis and application ability of health data in a comprehensive way to lay a solid foundation for the digital development and telemedicine of their profession. In addition, an "Advanced Training Course on Digital Transformation of Big Health Industry" can be set up for employees. The training course is to invite industry experts, enterprise executives and technology pioneers as lecturers to teach cutting-edge topics such as the application of big data in the medical and health field, artificial intelligence-assisted diagnosis technology, cloud computing platform construction and operation and maintenance, and business model innovation of digital health services. The participants can broaden their horizons through group discussion and apply what they have learned to practical work. Colleges and universities can also create digital scholarships to recognize outstanding students and provide them with financial support and academic guidance so that more students can join the health industry. By setting up relevant professional courses, providing diversified training opportunities, implementing incentive measures

and strengthening international cooperation, colleges and universities can not only build a digital talent training system for the major health industry, but also provide a large number of high-quality professionals for the industry, and promote the process of digital transformation of China's major health industry [13].

3.5. Industry-university-research cooperation promotes the cultivation and innovative development of talents

Colleges and universities can set up a special industry-university-research cooperation office, which is responsible for connecting internal and external resources and establishing stable cooperative relations with many well-known enterprises, medical institutions, scientific research institutions and investment institutions at home and abroad. Online industry-university-research projects are held regularly to provide direct communication between the two sides, learn about the latest scientific research results, and provide an in-depth understanding of industry trends for the auditing students and teachers. To grasp the opportunities of cutting-edge technology [14]. Colleges and universities can also create a learning mechanism:

(1) Multiple courses related to emerging digital technologies, artificial intelligence, big data and other frontier fields can be set up so that students can better access front-end skills;

(2) The university can also establish an online learning platform and integrate rich online course resources such as open courses, industry lectures and technical seminars from top universities at home and abroad so that students can learn anytime and anywhere and keep up with the development trend of technology.

After learning the basic knowledge, students and teachers can take part in the examination and obtain the corresponding certificate to prove their learning results. After students and teachers have obtained the corresponding certificates (proving a solid grasp of basic knowledge), colleges and universities can also assign teachers to participate in the implementation of projects in enterprises, and introduce the advanced theoretical knowledge learned to students as cases. Meanwhile, a report will be drafted to make certain suggestions on the arrangement of textbooks. The teaching materials compilation team can combine the latest big health data to compile teaching materials so that students are exposed to the latest big health knowledge. Through the way teachers and students learn together, colleges and universities can not only make both sides grow together, but also make a reputation, so that more students come to the school in this major, to make a certain contribution to the development of big health, but also enable online students to better participate in the work, through their practical activities, to promote the rapid development of big health industry [15].

4. Conclusion

It can be seen in the technological innovation and mode reform of colleges and universities that these strategies can not only improve the efficiency and quality of medical services but also optimize the health management process to meet the growing diversified health needs of the people.

Disclosure statement

The author declares no conflict of interest.

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