



# Development Trends and Risk Response Strategies of Health Insurance in the Digital Era

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**Abstract:** In the context of modern technological development, the insurance industry faces unprecedented opportunities. Under the impact of the digital era, the industry is undergoing a transformation where digitalization, intelligence, and personalization have become trends. This paper primarily focuses on the digital era to analyze the development trends of digital health insurance in the new period, elucidates the current development risks, and proposes countermeasures based on the current situation. By employing effective measures and methods, digital health insurance can create a new insurance ecosystem, recognize the problems faced in the new market environment, and further improve and innovate.

**Keywords:** digital era, health insurance, trends

## 1. Introduction

In the digital era, technologies such as artificial intelligence centered around big data, cloud computing, and the Internet have developed across various fields, rapidly creating new economic growth points. Against the backdrop of industrial digital transformation, the development of insurance technology promotes technological change and innovation in the insurance industry, bringing it into a new market environment. With the proliferation of digital technologies, the industry is undergoing a profound transformation. Digital health insurance, in particular, has emerged as a key area of focus, leveraging technology to enhance customer experience, streamline operations, and drive business growth. It is necessary to recognize the opportunities and challenges faced in the development of the industry and address the issues existing in the process of insurance digitalization. This involves identifying shortcomings in development, innovating business models, and steering insurance towards digital health insurance transformation.

## 2. Trends in the Development of Health Insurance in the Digital Era

### 2.1 Digital Transformation as an Inevitability

With the advancement of modern technology, consumer demands have significantly changed. One of the prominent trends in digital health insurance is the shift towards personalized insurance plans. Insurers are increasingly leveraging data analytics and artificial intelligence to tailor insurance offerings to individual needs and preferences. This personalized approach not only enhances customer satisfaction but also enables insurers to mitigate risks more effectively.

Another significant trend is the integration of telemedicine and virtual healthcare services into insurance offerings. With the rise of telehealth platforms and remote monitoring devices, policyholders now have access to a wide range of healthcare services from the comfort of their homes. This not only improves convenience for customers but also helps insurers reduce healthcare costs and improve health outcomes.

Wearable technology is also playing a crucial role in shaping the future of digital health insurance. Insurers are exploring ways to integrate wearable devices such as fitness trackers and smartwatches into their insurance programs to incentivize policyholders to lead healthier lifestyles. By tracking key health metrics in real-time, insurers can gain valuable insights into their customers' health status and offer personalized incentives and rewards.

Data analytics is another area where digital health insurance is making significant strides. Insurers are harnessing the power of big data and analytics to gain deeper insights into customer behavior, health trends, and risk factors. By leveraging predictive analytics, insurers can proactively identify high-risk individuals, tailor interventions to prevent health issues, and optimize insurance pricing and underwriting processes.

The insurance industry faces new business models under these new demands, with digitalization and intelligence becoming the main trends of future development, making digitalization inevitable. In the digital era, leveraging the Internet and advanced information technology to create comprehensive digital platforms allows insurance products to be digitized.

Insurance companies can sell products and handle claims online, optimizing business processes, and creating significant growth opportunities.

Firstly, by providing online services through digital platforms, customers can purchase insurance products more conveniently and enjoy the benefits of online services, enhancing customer satisfaction through real-time and personalized services. Accumulated customers can serve as a vital foundation for business development. Secondly, digital platforms help minimize operational costs. The trend of digital transformation can greatly improve operational and management efficiency, help insurance companies streamline their workforce, and ensure more profits during development. Lastly, digital technology aids scientific decision-making. In the context of intelligence, digital transformation enables insurance companies to collect vast amounts of data. These data can serve as the basis for scientific management, allowing timely identification of existing risks in insurance, facilitating scientific evaluation, and ensuring the scientific and reasonable pricing of products.

## **2.2 Development Towards Intelligence**

With the support of AI intelligence, the development of the insurance industry is full of opportunities. Intelligent technologies, including artificial intelligence and the Internet of Things, provide opportunities for advancement for insurance companies. For example, insurance companies can use AI algorithms and big data analysis to accurately assess customer risks and provide personalized products to meet different customer needs. By fully utilizing AI technology, insurance companies can monitor customer risks, intervene promptly, and help customers reduce losses. Moreover, with the support of intelligent technology, insurance companies can improve the speed and efficiency of claims processing, shortening the claim cycle and enhancing customer experience, thereby reducing claim costs.

## **2.3 Providing Personalized Services in the Service Market**

In the digital era, the insurance industry will continue to develop, striving to provide personalized services to customers, which can be well realized with the support of intelligent technology. Insurance companies can meet customer needs by providing personalized products based on their backgrounds and predicting market risks. Personalized services can enhance customer satisfaction with insurance products, contributing to the formation of a good reputation and influence in market development. Furthermore, personalized services facilitate market expansion for insurance companies, driving innovation in service management models. For example, offering more flexible plans and online consultations to meet diverse customer needs[1].

# **3. Opportunities for Health Insurance Development in the Digital Era**

## **3.1 Integrating Resources to Create One-Stop Health Management**

In the era of big data, the development of health insurance exhibits the most direct characteristics, specifically reflected in:(1)Cross-industry Collaboration: For example, health insurance collaborates with medical institutions, leveraging insurance technology to enrich management and create a health and medical big data platform. In the modern context, both independent and combined forms of insurance technology can fill gaps in the health and medical field. For instance, using various wearable devices to understand users' personal health information, recording users' actual conditions through mobile terminals, understanding customers' consumption abilities, and focusing on users' situations to provide targeted insurance products. Big data provides a vast amount of health data, which can serve as a crucial basis for the development of health insurance.(2)Creating a One-Stop Health Platform: For example, health and medical big data platforms and the "DT-C-I-H" system. "DT" refers to "big data + insurance technology," which can perform customer profiling, creating a virtuous cycle between company operations and claims (I), increasing medical institutions' (H) revenue, and offering personalized products (C), forming a new business model of "insurance + technology." This model closely links insurance companies and medical institutions, forming a strategic cooperation model for joint management. Insurance companies pay medical expenses and supervise service quality, while medical institutions provide quality services and bear treatment risks. In this process, health insurance companies transition from being mere claim payers outside the doctor-patient relationship to becoming parties involved in the doctor-patient relationship, offering corresponding services based on the actual situation of customers, controlling overall medical costs, and ensuring overall customer satisfaction.

## **3.2 Enhancing Infrastructure to Create Intelligent Operation Management**

With the support of modern technology, digital methods can be used to create an intelligent operation management model. Health insurance can enhance its impact through innovative marketing methods and intelligent customer service models. This approach shifts the traditional model, which primarily relies on personal marketing, to one supported by digital technology, facilitating innovative marketing. In the digital era, health insurance, internet technology, and healthcare are

deeply integrated, achieving real cross-border communication to better serve people. Additionally, connecting online and offline marketing channels allows frequent interactions with customers using digital methods, directly presenting insurance types and coverage to customers, addressing issues in traditional insurance product promotion. The "Internet+" broadens channels for insurance product promotion, such as online insurance supermarkets offering a wide range of online products to meet customers' online needs. Insurance companies can also set up official websites, apps, and mini-programs to promote information and tap potential customers. Moreover, "innovative marketing methods + intelligent customer service" can clarify insurance process management and provide differentiated personalized products. In the digital context, the efficiency of claims processing will also be significantly improved. Insurance companies can also use "big data + blockchain" to achieve insurance anti-fraud, reducing the risks associated with health insurance[2].

#### **4. Risks Faced by Health Insurance in the Digital Era**

Despite the numerous benefits of digital health insurance, there are also several challenges and risks that insurers must navigate. One of the primary concerns is data security and privacy. With the increasing volume of sensitive health data being collected and stored digitally, insurers must implement robust cybersecurity measures to protect customer information from cyber threats and data breaches. . Other things may include: Resistance to Cross-Industry Collaboration: Cross-industry cooperation faces significant resistance. For example, internet companies and insurance operations fall under different industries, leading to numerous limitations in data sharing. Operational Innovation Challenges: The innovation in health insurance operations faces various tests, such as moral risks and market risks. For instance, smart wearable devices face the risk of data breaches. Data Duality: In the digital era, data has the dual attributes of competitive value and customer rights. Therefore, it is crucial to find a balance between exploiting data value and ensuring its development and protection. Regulatory challenges pose another significant hurdle for insurers operating in the digital health insurance space. The regulatory landscape is constantly evolving, with new laws and guidelines being introduced to govern the collection, storage, and use of health data. Insurers must stay abreast of these regulations and ensure compliance to avoid potential legal repercussions. Integrating digital health insurance with traditional healthcare systems is another complex challenge. The healthcare industry is known for its fragmented nature, with multiple stakeholders involved in the delivery of care. Insurers must navigate this complex ecosystem and establish seamless partnerships with healthcare providers to ensure the effective delivery of digital health services to policyholders. Consumer trust and adoption are also critical factors that can impact the success of digital health insurance initiatives. Many consumers are still hesitant to share their health data with insurers due to privacy concerns and fears of discrimination. Insurers must prioritize transparency, education, and communication to build trust with customers and encourage widespread adoption of digital health insurance solutions.5. Strategies for the Development of the Health Insurance Industry in the Digital Era

##### **4.1 Health Insurance Companies Should Actively Adjust to Mitigate Risks**

In the digital era, health insurance should transition towards multi-industry collaboration. Health insurance companies, as the main entities, should actively play a leading role with a broad vision and high standards to guide industry development and progress. Large health insurance companies should adopt a broad perspective, establish a digital ecosystem for health insurance, harness digital strengths, and create a digital ecosystem that aligns with the development trends of the digital era to promote the growth of health insurance. Additionally, they should emphasize the management philosophy of the digital economy era, highlighting the value of technology to enhance industry value. Health insurance companies can also actively collaborate with internet companies and foster professional talent through efficient cooperation[3].

Small and medium-sized insurance companies should innovate themselves with an open and cooperative attitude to build a digital ecosystem for health insurance, leveraging digital opportunities to strengthen themselves. They should develop unique insurance products tailored to their actual development needs. During development, they should actively expand their business, examining their growth from a macro perspective. Small and medium-sized health insurance companies should maintain a sense of crisis, comparing their development levels within the ecosystem to avoid being eliminated by excessively pursuing market share or profits.

##### **4.2 Technological Service Development Strategies for Health Insurance**

Health insurance companies must respect the characteristics of industry development and emphasize cross-industry cooperation. The essence of health insurance is risk management related to the insured's injury or death, which is highly professional. In the development process, adverse selection and information asymmetry are industry pain points. Technological service companies should innovate management using diverse data methods, identify pain points based on an understanding of health insurance operations, implement scientific innovations, and choose optimal solutions to address

issues while continuously innovating technologically. Since medical institutions and health insurance companies do not have a subordinate relationship, technological service companies can leverage their advantages to provide technical support for the medical sector and open data sharing ports to deepen cooperation, building a data-sharing platform between health insurance and medical services[4].

Technological service companies in health insurance need to respect market development rules and adhere to professional ethics. The stability of the health insurance market requires the constraint of market rules. In the digital era, data is core but also a regulatory challenge, with risks of data leakage and misuse. There are instances of weak ethical awareness among insurance agencies and technology companies illegally selling and marketing customer data, which undermines market stability and threatens user security. Therefore, technological service companies in health insurance should respect market rules during their development, uphold basic ethics, and adhere to professional standards in their operations. They should establish intelligent and agile digital management systems to promptly identify violations, cut off risks at the technical level, and protect customer privacy.

In the new era, it is necessary to promote technological advancement. As technology-driven companies, health insurance technological service companies face innovation risks and insufficient motivation, affecting the industry's future development. Thus, technological service companies need to actively expand financing channels externally, streamline organizations internally, and revitalize funds to address financial shortages. They can also collaborate with universities to cultivate high-quality technological talent.

### **4.3 Strengthening Government Regulation**

In the digital era, the financial industry's digital transformation is rapid. Against this backdrop, leveraging cloud platform resources to ensure data security and achieve technological empowerment is of great significance. Government regulatory bodies should actively focus on technological advancements and encourage health insurance companies to innovate and improve their systems during the construction of a digital health insurance ecosystem. Compliance with regulations and industry standards is another key aspect of risk mitigation. Insurers must stay compliant with data protection laws such as the Health Insurance Portability and Accountability Act (HIPAA) and the General Data Protection Regulation (GDPR) to ensure the lawful collection, use, and disclosure of health data.

Before issuing regulations, government departments should enhance and fill gaps in market regulations based on the actual development of the industry and its new forms, making health insurance development more scientific. Protecting consumers' legitimate rights is essential in market development. Subsequently, timely protection reviews should be established. Health insurance products launched in the market should be promptly tested for risk control, moving the risk control process forward. During development, it is advisable to recommend internal assessment mechanisms for consumer rights protection, covering the entire department. Government-issued regulations must be strictly enforced, and ambiguous parts should be carefully interpreted and fully disclosed to inform consumers about the characteristics and risks of insurance products, fundamentally protecting consumer rights[5].

The health insurance field needs to break down regulatory data barriers and build an integrated regulatory system. To achieve high-precision industry regulation, regulatory bodies need to dismantle barriers between health insurance, medical institutions, and internet technology companies. Utilizing data sharing to optimize management, establishing a bidirectional data interaction mechanism, and standardizing data can enable regulatory bodies to understand the operational status of the entities they oversee. In modern development, it is crucial to clarify regulatory scope, enrich regulatory tools, specify regulatory entities, and use intelligent methods to establish a risk early warning mechanism, thereby achieving digital and integrated regulation of health insurance.

### **4.4 Innovation in Digital Health Insurance**

Innovation is at the heart of digital health insurance, driving advancements in AI, blockchain, predictive analytics, and gamification. Artificial intelligence and machine learning algorithms are being used to automate claims processing, detect fraud, and personalize insurance offerings based on individual risk profiles. By harnessing the power of AI, insurers can improve operational efficiency, reduce costs, and enhance customer satisfaction.

Blockchain technology is another game-changer in the digital health insurance space, offering secure and transparent data sharing capabilities. Insurers can use blockchain to create tamper-proof health records, streamline claims processing, and enhance data security and privacy. By leveraging blockchain, insurers can build trust with customers, reduce fraud, and improve data accuracy and integrity.

Predictive analytics is revolutionizing risk assessment in health insurance, enabling insurers to forecast health outcomes, identify high-risk individuals, and tailor interventions to prevent costly health issues. By analyzing vast amounts of health

data, insurers can proactively manage risks, optimize pricing strategies, and improve underwriting accuracy.

Gamification is also being used to promote healthy behaviors and incentivize policyholders to lead healthier lifestyles. Insurers are incorporating gamified elements such as rewards, challenges, and competitions into their wellness programs to motivate customers to exercise more, eat healthily, and manage chronic conditions effectively. By making health and wellness fun and engaging, insurers can empower customers to take control of their health and well-being.

## 5. Conclusion

In conclusion, the future of digital health insurance is bright, with technology driving innovation, efficiency, and customer-centricity in the insurance industry. By embracing digital transformation, insurers can create a new insurance ecosystem that is responsive to customer needs, adaptable to market changes, and sustainable in the long run. With the right strategies, technologies, and partnerships in place, digital health insurance has the potential to revolutionize the way healthcare is delivered, accessed, and financed, ultimately leading to better health outcomes and improved quality of life for individuals and communities alike. By embracing digital technologies and innovation, insurers can create a new insurance ecosystem that is customer-centric, efficient, and sustainable. Technology can be leveraged to streamline insurance processes, automate routine tasks, and enhance the overall customer experience. From online policy management portals to AI-powered chatbots for customer support, digital solutions can revolutionize the way insurance is bought, sold, and managed.

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