

Research on Building Open Insurance in the Insurance Industry Based on the Concept of Open Banking

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ABSTRACT

In recent years, as the financial technology booms quickly, profound changes have begun to take place in the banking industry and the financial industry as a whole. The concept of open banking has gradually become the mainstream thinking of commercial banks, simultaneously, the introduction of APIs, SDKs and other technical means has led to great changes in the business philosophy and business development model of traditional commercial banks, and has also brought good development opportunities to the banking industry. The insurance industry, a branch of the financial industry, is also encountering the historical proposition of "opening up". This article, by analyzing the definition and development history of open banking and open insurance, the development model and the practice in China of open insurance are elaborated, while countermeasures against the challenges faced by open insurance is advanced.

Keywords: *Open Banking; Insurance Industry; Open Insurance*

1. INTRODUCTION

From the era of great navigation to the era of great integration, from the rise of finance of science and technology to "financial technology", "sharing economy", "artificial intelligence" and other technology complying with the law of finance theory of continuous improvement and practical exploration, the future financial competition will be a competition of ability to create new business models and scenarios based on the use of science and technology, and the new model will have revolutionary changes to the traditional model development. With the development of financial technology, the prospective financial services continue to develop in the direction of open finance. Judging from the current development trend, there is a trend from "open banking" to "open insurance" to "open financial control".

In recent years, traditional commercial banks have been actively exploring transformation opportunities accompanied by the open banking philosophy gradually being the mainstream idea of commercial banks' development. As a member of the financial industry, the insurance industry is also facing the historical proposition of "opening up". Scholars have conducted more research on open banking, but little research on

open insurance so far. The concept of open insurance was proposed relatively late at home and abroad, and the theoretical research on it is still mainly focused on the operation mode and construction standard of open insurance with deficient theoretical research, which is still in the preliminary stage. The current research on open insurance has certain theoretical and practical significance.

2. LITERATURE REVIEW

Open banking originates from abroad, Chen, Gavius[1] defines open banking as a financial service platform oriented to users' needs with its core at scene building. Gartner[2] considers open banking as a financial information sharing platform that integrates the power of all market parties. Brodsky, Oakes[3] believe that the three main criteria for open bank construction are information sharing, API technology and an open platform that can provide users with diverse services and products. In the opinion of Dimachki[4], the core focus of building an open bank lies in accessing, sharing and processing financial information. A plethora of scholars in China have also started to study open banking.

Chen Chong[5] put forward that the core of open banking is to accomplish the information sharing of commercial banks through API, SDK and other technical means; Yang Dong[6] mainly analyzed that the introduction of advanced technology in open banks will be in conflict with trading platforms, and then open banks will be faced with systemic risks such as operational risks and information system failures. Domestic scholars' research on open banking mainly concentrates on the post-2019 period, Yi Xianrong, Chen Yingying and Zhou Junjie[7] believed that the essence of open banking is to achieve information sharing, and to allow information as a factor of production to reintegrate financial resources through legal and technological means, thus bringing disruptive changes to traditional financial institutions; Zhou Yan[8] proposed that the core of open banking is to create an open platform to establish a complete financial ecological chain of commercial banks, cooperative manufacturers and consumers, so as to realize financial product services and consumers through technical means, so as to achieve efficient integration of financial products and services with consumers. By 2020 more scholars have started to focus on the risk analysis of open banking. For example, Liu Cuihua and Zhang Bin[9] argued that commercial banks should actively develop towards open banking from the perspective of integrated technology, profitability and risk control.

Integrating with the above-mentioned, the research on open banking has formed a more mature research system, and there are deeper studies and discussions on the impact and countermeasures brought by the transformation and upgrading of financial technology for traditional banks. However, there is less literature on how to build open insurance, the model of open insurance operation and risk analysis for the insurance industry in using API and other technologies.

3. THE RISE AND DEVELOPMENT OF OPEN BANKING

3.1. The origins of open banking

In recent years, as the financial technology burgeons quickly, profound changes have begun to take place in the banking industry and the financial industry as a whole. Relying on the promotion of Internet thinking and the continuous enhancement of technological strength, commercial banks have developed from Bank1.0 to Bank4.0 little by little, realizing leapfrog development from physical outlets, e-banking to Internet banking and then to open banking. In the Bank 1.0 era, it refers to the banking business form which is completely based on the physical branches of banks. In the Bank 2.0 era, electronic technology has extended the reach of the physical branch, benefiting from the commercial application of electronic computer technology. In the Bank 3.0 era, banking services are available anytime, anywhere, and users are

in a hyper-connected information world in which banks are ubiquitous. As long as you have a smartphone, you can make banking business other than cash at any time and any place.

In the era of Bank4.0, smart banking services embedded in our lives have opened up a whole new world where the development and popularization of innovative technological means such as Artificial Intelligence (AI), Augmented Reality (AR), speech recognition devices, wearable smart devices, driverless, 5G communication, block chain, etc. will allow the utility and experience of banking services to be completely separated from physical branches and the extension of channels based on physical branches and will no longer be attached to a specific financial product, but directly embedded in our daily life scenes. Bank 1.0 to Bank 3.0 are the expansion of service channels based on physical branches; Bank 4.0 is a re-examination returning to the essence of banking, providing us with the most possible route and innovative methods towards the future of banking.

Table1 The development stages of banking function

Stage	Time	Features
Bank1.0	1472-1980	Relying on physical outlets
Bank2.0	1980-2007	Coexistence of physical outlets and e-banking
Bank3.0	2007-2017	Exploring direct banking and internet banking
Bank4.0	2017-now	Exploring open banking

The term "Open Banking" originated in Europe and America, but in many countries and regions around the world, there have been opening hours for financial services in the form of open APIs. In 2004, Paypal launched the Paypal API, which is regarded as a precursor to the opening of services in the financial sector. In 2007, the European Parliament and the European Union Council passed the "European Payment Services Act", which served as the legislative foundation for open banking in EU countries.

In June 2013, the UK Competition and Markets Authority (CMA) launched the Open Banking initiative. In August 2015, the UK Treasury led the Open Banking Working Group to study and develop an open banking framework and standards, and released "The Open Banking Standard" in March 2016. In January 2018, the CMA required nine institutions, including HSBC, to share information, making the UK the first country to implement Open Banking.

In October 2003, Taobao launched the Alipay service, and various commercial banks opened their API interfaces one after another to support their customers to make payments through Alipay, so that China's mobile payment entered the fast lane. In 2013, Bank of China

officially released the BOC Open Platform, which opened more than 1,600 interfaces. Since 2018, Shanghai Pudong Development Bank first launched its API Bank strategy, followed by Industrial and Commercial Bank, China Merchants Bank and China Construction Bank, which have all explicitly released signals to the public to build an open bank. Therefore, 2018 is deemed as the first year of open banking development in China.

3.2. The definition of open banking

Since the term open banking was introduced into China, industry participants have conducted a lot of theoretical studies and practical explorations, a unified definition of industry consensus was not reached yet. Some institutions and scholars believe that open banking is an innovative platform-based business model that emerges in the process of digital transformation of commercial banks. There are also some views that open banking is not only a business model, but also a "new business model" for commercial banks, which is the development direction of banks in the process of the deepening evolution of digital society. As for the open mode, some think that "going out" is the mainstream mode of open banking, in which commercial banks embed financial products and services into the scenarios and platforms of partners by means of financial technology, export their service capabilities to reach a wider range of customers, realizing that financial services are ubiquitous. –"When you need financial services, it happens to be there". Another view is that open banking should be a two-way open model that includes both "going out" and "bringing in". Commercial banks build and open their own ecology and scenarios while empowering themselves externally, and introduce external partners to build the ecology with its own platform, including industry enterprises, financial peers and financial technology companies. Furthermore, there are still other different views and controversies.

3.3. Commercial banks' exploration of open banking

According to the 2019 Open Banking Development Research Report released by the Internet Finance Association of China (IFA), the IFA found through a survey of 51 commercial banks of various types in 2019 that 65% of the commercial banks have established open banking platforms and carried out in-depth cooperation with partners. From the information disclosed in the annual reports of major commercial banks in 2019, large state-owned commercial banks have mentioned open banking and laid out relevant fintech innovations in their 2019 annual reports. Among the joint-stock commercial banks, such as Pudong Development Bank, China Merchants Bank and Industrial Bank have all laid out open banking. The construction of open banking varies widely among city commercial banks, such as Shanghai

Bank, which regards open banking as an important direction for transformation and upgrading, and some commercial banks have not yet carried out the construction of open banking.

According to the classification of the current practice of domestic commercial banks in building open banks, the construction modes are mainly divided into the following three types.

Model A: Scene access type. In this model, commercial banks focus on the aggregation and access of financial service scenarios, revolving around the differentiated financial service needs and business scenarios of corporate customers, and aggregate the services, products and information of collaborative vendors into their own APPs or platforms through H5, applets and other technical means in a bid to build a closed business ecology and provide services directly to end customers.

Model B: Platform export type. Under this model, commercial banks concentrates on the construction of underlying APIs, SDKs and other technical platforms. By opening APIs and exporting SDKs, they open services and share information with partner institutions, thus driving the construction and innovation of financial service scenarios.

Model C: Comprehensive. In this model, commercial banks put equal emphasis on open platform and business ecology construction, not only building open business scenarios and ecology around customers' own APPs, but also building open platforms through APIs and SDKs to stimulate the participation of cooperative manufacturers and institutions to jointly build open business ecology.

4.OPEN INSURANCE WILL BECOME THE FUTURE TREND OF THE INDUSTRY

Similar to the banking industry, the insurance industry encounters the historical proposition of "opening up" whether it is in terms of improving customer experience or creating new business scenarios. As the digital transformation of the insurance industry is constantly advancing, the blueprint of insurance digital ecology is emerging, and "open insurance" is on the way.

4.1. What is open insurance

Referring to the definition of open banking and combining with the characteristics of the insurance industry itself[10], open insurance can be defined as an innovative platform-based business model that provides services for customers, technology companies, collaborative vendors developers, suppliers and other partners. It makes use of APIs and other technologies to share information, algorithms, transactions, processes and other business functions with business ecological partners, achieving the "plug-and-play" of insurance

products and services and jointly establishing an open pan-insurance ecosystem.

At the specific implementation level, open insurance will form a three-tier structure step by step premised on products and services, API technology as a means and commercial ecology as a goal.

The bottom layer is the insurance products and services provided by insurance companies subject to the needs of ecological scenarios, which are characterized by on-demand supply, high digitalization and flexible configuration, serving as the basis of open insurance.

The middle API layer, as a super connector and capability supply platform of open insurance, can realize the fast connection between insurance and ecological partners and customers, and provide support for the realization of various scenarios, innovative products and service demands in the ecology, export insurance products and services on demand, and even export information, algorithms and business processes to the outside world, achieving the effective extension of insurance service contacts.

The ecological layer at the top is the business ecological scenario platform of open insurance. Relying on its own business and technical strength or that of its partner companies, the insurance company collaborates with other business ecological partners to actively build a business ecosphere, deepen scene integration, and provide new cross-border insurance combination products and services on demand based on the life and business scenarios and needs of customers in the pan-ecology, effectively expanding business growth space and meeting the in-depth needs of different types of customers.

4.2. The key features of open insurance

"Away game" thinking is in comparison to "home game" thinking of traditional insurance institutions. Open insurance is in essence a comprehensive introduction of "away game" thinking, preposes "business outlets" by means of networking and digitization, effectively extends the reach of insurance scenarios and realizes deep integration with service scenarios to provide scenario-based, end-to-end, comprehensive and seamless integrated service solutions for insurance consumers or institutional customers.

Information sharing. Information both serves as the basis of insurance operation and the source of value creation. The key point of building open insurance is accessing, processing, storing and sharing information, and information sharing is the prerequisite and foundation for value sharing. Under the premise of customer's consent and privacy guarantee, it allows cooperative manufacturers and institutions to access the information of insurance institutions safely and

conveniently, thus revitalizing the information in the flow and sharing, innovating insurance products and services, and realize value-added.

Ecosystem. Open Insurance emphasizes interconnection and cooperation and sharing. Insurance institutions and technology companies have been transformed from the previous antagonistic relationship into mutually beneficial ecological partners. Open Insurance gradually becomes an inclusive and shared ecosystem in which all kinds of participants exercise all due diligence and care, share and collaborate with each other to finally build an interactive ecosystem of "digital + scene + service"[11].

5.ACTIVE IMPLEMENTATION IN PRACTICE OF OPEN INSURANCE

5.1. The main models and practices of open insurance in China

5.1.1. Self-built open insurance platform model

The core of self-built open insurance platform model is to build an "insurance that is platform", which requires high technical ability, capital ability and talent reserve of insurance institutions themselves, and also has high requirements on the existing information base of insurance enterprises. In the practice of self-built open insurance platform model, traditional large insurance institutions such as PICC, Guo Shou and Ping An established their official website direct sales platform early, which is a pioneer of open insurance in China. Then they established mobile internet sales platform respectively to meet the insurance sales demand in the era of smart phones. With the rapid development of Internet insurance, some innovative open insurance platforms have also emerged, among which Zhong An Insurance is a typical case. As the first Internet insurance company in China, Zhong An Insurance is based on the dual-engine development strategy of "insurance plus technology" and is committed to reshaping the insurance value chain by applying new technologies revolving around five major ecologies, including life consumption, health, automobile, air travel, and consumer finance. Zhong An Insurance has set up Zhong An Technology concentrating on technology innovation, and actively builds Zhong An open platform. Based on Zhong An Insurance's core system, it opens internal service APIs to cooperative manufacturers and users' platforms, which supports the API access mode under the lightweight development conditions and also supports QR code, H5, PC and other forms of one-click access without development, whose application covers 16 scenarios such as aviation, e-commerce, medical, sports, and O2O. At present, the Zhong An Insurance has started the era of "Technology 3.0", provided technology output in the form of information, technology and models to the outside world,

signed up more than 300 cooperative customers, and simultaneously taken the first step to export technology overseas, becoming a pioneer in exploring the model of self-built open insurance platform in China.

5.1.2. App aggregation ecological mode

Under the App aggregation ecological model, insurance companies mainly rely on their own App platform and take the initiative to integrate various scene services of partners into their own App platform, and then provide services directly to end customers, which can effectively drive the resources of merchants, form the cross-edge network effect of the platform, and create a mutually beneficial and win-win closed loop with ecosphere among multiple parties.

Furthermore, the App aggregation ecological model can effectively extend the scene and reach the insurance end customers directly, and insurance enterprises have full operational initiative and business control, which is conducive to accumulating first-hand information resources and enhancing brand recognition.

As the technical threshold of the App model is relatively low, there is also a situation that the industry is jumping on the bandwagon, and there is still some room to be improved in terms of data security, privacy protection, technical specifications and open boundaries. With respect to specific practice, many large insurance organizations such as PICC, Guo Shou, Ping An, Tai Bao and Tai Kang attach great importance to this model and invest a lot of resources to make a bigger ecosystem.

5.1.3. Integration of cooperation into the ecological model

For some small and medium-sized insurance companies, their technical strength and resources are limited and their innovation ability is relatively weak, so they cannot build their own open insurance platform. Meanwhile, due to the relatively small number of customer groups served and the relatively limited ability to integrate upstream and downstream resources, the mode of integrating ecology with own app may also get half the result with twice the effort, encountering the dilemma of high input and low output.

Therefore, many small and medium-sized insurance companies abandon the asset-heavy operation model of self-built platforms and choose to rely on the assistance of insurance technology platforms or innovative insurance intermediaries. Based on technological innovation, these innovative platforms and institutions have built an open insurance sales and service platform, connecting insurance institutions on the one hand, and enterprises or individual customers in specific fields on the other, effectively extending the scenarios of small and

medium-sized insurance companies to provide small and medium-sized insurance companies with diversion.

5.2. The major challenges faced by open insurance

5.2.1. The issues of traditional insurance business concept and capability.

Open insurance advocates open, emphasizing the value of insurance companies in a symbiotic ecology, which is a challenge to the traditional insurance business model^[12]. In terms of traditional insurance operation, especially from the perspective of "security", they are all based on their own "home game" thinking, implementing the "self-oriented" business philosophy, and adopting the concept and boundary of strict regulations on the front and back offices, leading to rigidity and low efficiency in operations. Traditional insurance institutions have carried out a lot of positive and beneficial exploration in information construction, but there is still a certain gap between the high requirements of open insurance for insurance institutions in terms of digitalization and innovation ability. To adapt to the rapidly varying situation in the era of open insurance, traditional insurance institutions still have a long way to go with respect to business concept transformation and capacity enhancement.

5.2.2. Customer privacy and data security issues

The traditional insurance business system is relatively closed with customer information only flowing and using within the system. The open insurance model effectively connects insurance companies with external organizations and shares customer information and resources inside and outside insurance companies, which to a certain extent weakens the role of insurance institutions as the "gatekeepers" of customer information, and increases the storage points and transmission frequency of customer information, thus increasing the possibility of customer information leakage.

In addition, due to the increase in the number of ecological subjects holding customer information, there may be some companies implementing cross-regulatory jurisdiction and misuse of insurance customer information and data, posing a threat to customer privacy and data security.

5.2.3. The challenges of organizational structure change

The traditional organizational structure of insurance companies is subject to the model of centralized management of the headquarters and branch companies^[13]. Most of the headquarters adopt vertical management system, with different departments such as

business, finance, risk control and actuarial independent of each other. However, such centralized structure is not suitable for the characteristics of open insurance, which requires a more open, flat, interconnected and nimble organizational structure in order to respond to external scenarios in a timely manner, develop on-demand and provide corresponding insurance products and services to the outside on time. To better adapt to the development characteristics of open insurance, insurance companies need to promote the transformation of traditional organizational structure and establish a more open and flexible organizational management structure.

5.2.4. Regulatory and compliance challenges

Open insurance emphasizes open sharing, integration and win-win. Compared with the traditional insurance business model, it is more prominent to break the industry boundary and realize the scenario extension and industry integration development, which will bring about great challenges to the regulation of licensed insurance industry. The conventional insurance regulation has clear requirements on the operation territory and business type of insurance institutions^[14]. In the open insurance model, the form of insurance business development, the scope of development, the opening and use of information, and the way of business partner cooperation will encounter new situation, and insurance supervision will face new challenges.

6. CONCLUSION

In conclusion, based on the cornerstone of the growth of financial technology, the insurance industry, as an important part of economic life, is undergoing the baptism of financial technology. From the electrification and informatization of insurance policies to the internetization of insurance channels, products and services, and then to current insurance technology, the whole process of insurance business has been upgraded and optimized, informatized, networked, and mobile with the constant combination of industry and information technology, which is accompanied by the transformation and upgrading of the industry from labor-intensive to talent- and technology-intensive at the same time. In the future, insurance technology innovation will definitely become the competition focus in the insurance industry, and the operation mode of open insurance will accelerate the transformation and upgrading of the insurance industry and the improvement of the efficiency of the service society.

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