

Research on Smart Financial Risk Management Transformation based on Financial Technology

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Abstract

Financial technology is one of the hottest topics at present. The development and application of new generation information technologies such as big data, cloud computing, blockchain and artificial intelligence have opened a new era of financial technology. The rapid development of financial technology is changing the traditional financial industry and triggering changes in the financial industry. It has a great impact on improving the efficiency of financial services, innovating financial products and helping prevent financial risks. Financial technology not only puts forward new requirements for the operation and management of commercial banks and other financial institutions, but also brings new opportunities to the traditional risk management. At present, financial enterprises represented by large commercial banks, in view of the limitations and shortcomings of traditional risk management, actively use the innovative technology of financial technology to carry out intelligent transformation of risk management.

Keywords

Financial Technology; Commercial Banks; Smart Risk Control; Financial Risk Management.

1. Connotation and Key Technology of Financial Technology

Generally speaking, financial technology refers to the innovative application of emerging technologies such as big data, artificial intelligence, cloud computing and blockchain in the financial field, and forms a business and service model supported by financial technology. With data and technology as the core driving force, financial technology continues to create more convenient, low-cost, inclusive and intelligent financial products and services to meet people's needs.

At first, financial technology was mainly used in P2P network credit and third-party payment, which did not attract the attention of commercial banks at first. In recent years, the traditional business areas of commercial banks have been constantly eroded by Internet finance. The banking industry led by the four major state-owned banks actively layout financial technology through acquisition, investment, strategic cooperation and other ways to create a new core competitiveness. In addition, due to the obvious homogenization of financial business and the intensification of inter-bank and cross-border competition, various financial institutions also actively use financial technology to achieve "cost reduction and efficiency increase" to deal with the competitive pressure of the market.

Among emerging technologies, big data focuses on solving the problem of total data management. The mature underlying technical framework makes data collection, storage, integration, calculation and analysis no longer the bottleneck. The large-scale and high-quality data of commercial banks naturally make big data technology the bottom dependence of financial technology development. Commercial banks have accumulated in the use of big data

technology, which is often used in customer portrait, precision marketing, risk control and operation optimization.

Artificial intelligence mainly includes cutting-edge computer science knowledge such as machine learning theory, focusing on solving data analysis and application problems; Artificial intelligence highly relies on big data resources to quickly process massive data by imitating the operation mechanism of human brain. For commercial banks, artificial intelligence can be applied to intelligent payment, intelligent marketing, intelligent risk control, intelligent investment and research and other fields.

Cloud computing is a computing mode that uses remote virtual host to store and process data, and only issues processing instructions locally, which solves the problem of data computing ability; Cloud technology makes the data storage and processing of commercial banks move from distribution to concentration, so as to achieve the purpose of elastic allocation of computing resources, safer data management and more reliable system operation.

Blockchain is a node trust mechanism based on big data encryption algorithm. It has the characteristics of decentralization, openness and transparency, and can not be tampered with. It can reduce transaction costs and improve economic operation efficiency. At present, commercial banks have begun to apply blockchain technology to capital supervision and other fields.

In real life, the changes brought by financial technology are reflected in many aspects. For example, smart outlets bring better user experience. When a bank customer enters a smart network based on artificial intelligence services, the customer identification system based on biometric technology will identify the customer's identity at the first time, and the customer can complete all kinds of common businesses on the intelligent interactive screen. In addition, through big data and artificial intelligence technology, intelligent investment advisers evaluate customers' personal assets and risk tolerance, and provide customers with online portfolio configuration suggestions and portfolio management consulting services.

2. Financial Technology Helps the Smart Transformation of Risk Management

The deep integration of Finance and science and technology has injected new vitality into financial development. Driven by financial technology innovation, all kinds of financial services will break through time and space constraints and change customers' financial consumption habits. The demand of banks for physical outlets and employees will be reduced, and customers can get a better online financial service experience. Therefore, the application of science and technology has not only spawned new business models and products in the market, but also contributed to the transformation of risk management wisdom, improved the quality, efficiency and ability of risk management of financial institutions, and promoted the optimal allocation of more resources to the areas most needed by the real economy.

2.1. Big Data has Become a New Trend of Risk Management

Data is an indispensable information source in the process of financial risk management. The comprehensive degree of obtaining information determines the effectiveness of financial risk management decisions. Financial institutions need to timely and accurately collect customer data, transaction data, contract data, financial data, operation behavior data, collateral data and market situation data, and realize fine classification management on this basis. Driven by big data technology, risk management solves the dilemma of single data source and limited data dimension in traditional risk management, and completes risk management with full, effective and compliant data. At present, the risk control fields widely used in big data mainly include fraud identification, credit scoring and post loan management. Using scientific and

technological means, commercial banks can extract all-round customer data based on scenario analysis, depict customer portraits 360 degrees, and provide comprehensive customer information for credit review.

2.2. Artificial Intelligence Improves the Efficiency of Risk Management

Risk management needs to establish intelligent thinking, use the application of artificial intelligence technology in big data platform, improve the timeliness of information acquisition, move forward risk prevention and control means, realize real-time data acquisition, dynamic adjustment of parameters, and innovate risk control, monitoring and early warning. The traditional data acquisition method makes the risk prevention and control focus on the event and afterwards, and the risk discovery will be delayed due to information asymmetry. Through advanced technologies such as biometrics, image processing, video tracking and monitoring, model fitting and so on, artificial intelligence is comprehensively applied to capture, analyze and judge the risk state of the regulatory object and give early warning, so as to find the potential risk factors earlier. In addition, artificial intelligence technology can operate continuously and dynamically adjust the risk model to realize efficient risk identification and provide scientific decision-making for risk management.

The close combination of artificial intelligence and big data has become an important means of risk management. Its basic logic is to grasp the risk law from more dimensions of big data through self-renewal, self adjustment and self iteration in deep learning and data mining.

3. Case Analysis of Smart Financial Risk Management Transformation of Commercial Banks

Take the Industrial and Commercial Bank of China as an example. Since 2017, the ICBC has focused on promoting the construction of the smart bank ecosystem ECOS project, supporting the new bank business forms with new technology, and supporting the strategic transformation of the smart bank. In recent years, ICBC has accelerated the integration of risk management and financial technology, and built an "E Shield" system, providing an overall solution for enterprise intelligent risk prevention and control.

Through the construction of ECOS project, the "E Shield" system fully applies big data, artificial intelligence and other financial technology technologies, strengthens the foundation of data, model and system, and strongly supports the intelligent transformation of ICBC risk management. Among them, in the application of big data technology, ICBC has always attached great importance to the big data service cloud technology, and the "E Shield" system has built an efficient, flexible and complete data platform, with the characteristics of full data, wide coverage and accurate identification.

"Comprehensive data" is mainly reflected in: the data platform establishes the same view of standardized risk data for dozens of individual customer variables and debt variables, and supports the automatic update of thousands of model indicators on a monthly basis; Establish "list database, event database and feature database" three group anti fraud information databases, integrate the risk lists inside and outside the bank, and realize the formatted collection of all kinds of fraud risk events; Establish the group's three unified databases of transaction data, market data and measurement parameters, covering the three time zones of Asia Pacific, Europe, Africa and the Americas.

"Wide coverage" is mainly reflected in: the data platform covers 670 million individual customers and 2 million corporate customers; Covering thousands of cooperative institutions in eight categories, such as funds, insurance and trusts; Collateral covering 285 cities, 500000 residential areas, 1.41 million buildings and 50 million households across the country; It covers

all traders from five institutions, including financial markets, asset management, precious metals, private banks and wealth management companies.

"Identification accuracy" is mainly reflected in: the data platform integrates and constructs the high-risk list database, and establishes the group anti fraud database, the group equipment blacklist, the group collateral database and the platform risk feature database to accurately identify risks.

In the application of artificial intelligence, "E shield" system comprehensive application of machine learning, knowledge map, biometric identification and other artificial intelligence technology, combined with logical regression, decision tree and other traditional modeling technology, developed the application score, behavior score, collection score, customer score dozens of credit score evaluation model, and the monthly tens of millions of collateral value automatic measurement.

In addition to the ICBC, many financial institutions are also aware of the important role of financial technology in the field of risk management, and are constantly increasing their investment in and research and development of financial technology. For example, Ping An Group uses big data technology to conduct information verification, blacklist comparison and social behavior analysis of customers' repayment ability and willingness of retail credit business, which can quickly identify fraud and greatly reduce the loan risk cost. The CMB in order to solve the risk management customer risk information scattered, correlation identification difficulties, through the integration of enterprise information inside and outside the bank, using big data and artificial intelligence, online risk data unified control platform, fully support enterprise risk information retrieval display, analysis and prediction and intelligent modeling function.

Therefore, driven by the development of science and technology, the financial industry is undergoing unprecedented changes. Under the new development situation, the state has put forward higher requirements for financial services to the real economy, preventing financial risks and returning to the origin of finance. The deep integration of financial technology and real economy provides a rare opportunity for the intelligent transformation of risk management of commercial banks. Commercial banks should comply with the vigorous development trend of financial technology, actively carry out model innovation and process reengineering of risk management, and realize intelligent decision support, accurate risk identification and automatic business handling.

The success of intelligent transformation of risk control is inseparable from the intellectual support of financial technology talent team. From the talent reserve experience of large foreign banks in developing financial technology, commercial banks must strengthen the cultivation of internal scientific and technological risk management talents. Re cultivate young risk management talents with multi-disciplinary background and familiar with specific commercial banking business, continuously improve the ability of using financial technology to implement risk management strategies, and build a training system of financial technology risk management talents. In addition, commercial banks should also tap high-quality high-level scientific and technological talents from external financial institutions and science and technology enterprises, constantly improve the risk control vitality and innovation kinetic energy of the risk management department of commercial banks, and truly ensure that the risk management of commercial banks has sustainable intellectual support.

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