

# Research on the Development of Financial Industry Under the Background of Big Data and Artificial Intelligence

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**ABSTRACT.** With the development of modern information technology, the integration of high and new technologies such as big data and artificial intelligence with traditional industries is getting closer and closer. In this context, big data finance and intelligent finance gradually become the focus of research and the key to financial business innovation. The efficient integration of big data, artificial intelligence and financial business will certainly push the development of financial business to a new level. This paper mainly analyzes the current situation of the fusion of financial industry and artificial intelligence, finds out the problems in the fusion, and puts forward the measures and suggestions for the efficient realization of intelligent finance.

## 1. Introduction

At the 2019 world artificial intelligence conference, insiders generally believe that finance and technology will become the future trend of the financial industry [1]. Big data, cloud computing and emerging technologies such as artificial intelligence are increasingly changing people's wealth management and investment behaviour. Insurance, securities, banks and trust use these new technology to constantly upgrade products, expand the business and financial sector and the effective combination of artificial intelligence, and promote the development of financial industry into a new chapter.

## 2. Development status of the financial industry under the background of big data and artificial intelligence

At present, the impact of the development of science and technology on the financial industry is mainly the gradual application of big data and artificial intelligence in the financial field. Big data and artificial intelligence have solved the pain points of traditional financial industry in data analysis, customer search, risk control and business supervision. There are many traditional businesses and scenarios that have changed a lot when combined with big data finance and intelligent finance. In the process of handling traditional financial business, customers need to provide all kinds of materials and statements, which is not only cumbersome, but also increases the cost of financial institutions and customers [2]. Through artificial intelligence technology, customer information can be intelligently classified, automatically verified, and after identification, all credit information can be automatically retrieved. Artificial intelligence can also automatically identify and analyze financial statements and interpret them to determine whether there are operational risks. In addition, technology integrates and comprehensively processes data collected from various parties to prevent and control risks. Although big data and artificial intelligence have brought technological innovation and business innovation to the financial industry, the deep integration of artificial intelligence and the financial industry is a long process, and there are also many problems in the practical application process.

## 3. Problems existing in the development of the financial industry under the background of big data and artificial intelligence

### 3.1. The financial coverage of the scene is low

At present some financial institutions to launch the "finance learning", "finance + life" and "financial and health" service life scene, but each financial institutions due to factors such as technology, talent, data. The process of building the scene is very difficult to form a systemic, in embedded in the process of financial development, consumer finance, supply chain finance has not yet establish a truly complete value chain, such as coverage are hard to guarantee, it is hard to satisfy the business enterprise (B), (C) (G), government of all kinds of financial needs. The scope of scene finance is narrow, which affects the implementation of scene finance.

### 3.2. Supervision is Difficult

The financial industry has high requirements for data compliance and security, while the traditional financial industry has less data, so manual analysis is tedious but relatively safe. In the era of big data and intelligent finance, the centralized processing of large amounts of data increases the risk of data processing. Since there is no unified department to supervise data processing, the privacy of customers will be leaked, which not only increases the difficulty of supervision, but also increases the risk of supervision [4]. At present, the business departments of financial institutions are independent, but artificial intelligence should realize system sharing. Therefore, financial institutions should first set up an artificial intelligence group on the organizational structure for unified management. Second, financial institutions should have a complete IT infrastructure. In addition, a department responsible for the landing application of artificial intelligence should be set up. Many innovative applications are exploratory and need to be supervised.

### 3.3. Lack of Specialized High-Tech Compound Talents

Big data and intelligent finance require versatile talents with both computer processing capability and high financial literacy [3]. At present, less than 1% of professionals engaged in financial business can use language processing technology, which has become a bottleneck restricting the development of big data and intelligent finance. Most of the former employees of financial institutions are graduates majoring in finance, and it is difficult to recruit talents with both financial industry knowledge and computer technology background, which makes the implementation of big data and intelligent finance more difficult.

### 3.4. Block Chain Financial Core Technology is Difficult to Implement

The construction of block chain finance is a huge project. First of all, financial institutions, regulatory departments, risk control departments and core enterprises need to form an alliance, which will upload and process the required data. The uploaded data are integrated and analyzed by specialized institutions to provide customized supply chain financial products. Finally, block chain technology will effectively enhance the liquidity of supply chain financial assets, mobilize new financing tools and risk control system to help cover the long tail market of financing, and promote supply chain finance. Problems in any of these links will lead to deviations in the output results and affect the development of specific financial businesses. The integration of capital flow, information flow, logistics and business flow in block chain is also very difficult, so the implementation of block chain financial core technology is difficult.

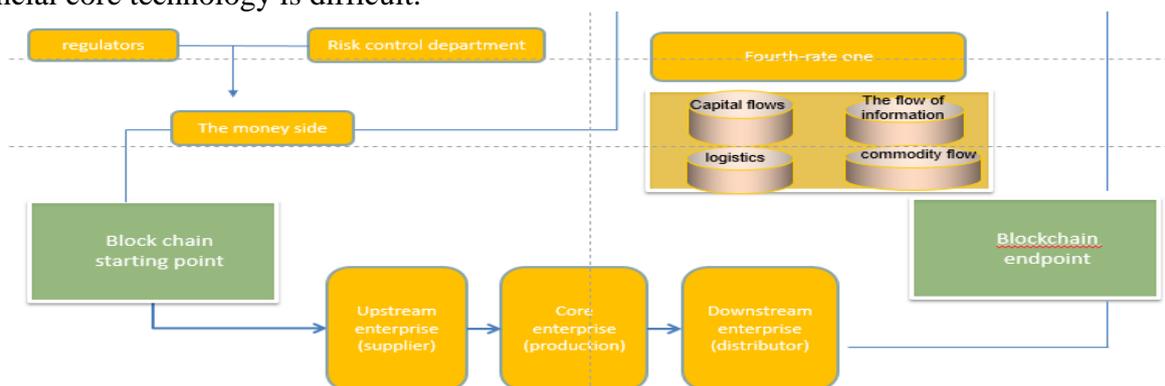


Figure 1 Block chain financial operation mode

#### **4. The Effective Integration Path of the Financial Industry and High-Tech Industry Under the Background of Big Data and Artificial Intelligence**

Although big data finance and intelligent finance, as new things, face various challenges in the growth process, they will surely continue to grow and expand just like new-born babies. In the process of carrying out big data and smart finance, the financial industry should constantly meet various challenges, effectively solve various problems encountered in the implementation process, and ensure its normal growth. The following measures should be put forward first, so as to realize efficient integration of the financial industry and high-tech industry.

##### **4.1. Improve the Coverage of Scenario Finance**

Low scene coverage is an urgent problem to be solved in the process of carrying out big data and intelligent finance. Financial institutions should constantly open up new sites, in addition to learning, health, life, and other areas, but also in other areas of related business. We will improve the internal control system in the three modules of proprietary cloud, medium platform and intelligence, and provide smart services in the fields of personal credit, small and micro enterprise credit, securities, insurance and supply chain finance. If smart financial work at a reception at financial institutions, we must perfect the smart pay, smart, intelligent customer service, marketing service system, if smart financial work in the financial institutions of China, we must perfect the intelligent risk control, intelligent interest, intelligent service system for research, if smart financial background play a role in financial institutions, it is necessary to improve the intelligent data, ensure the data accurate and reliable.

##### **4.2. Strengthen Supervision of Smart Finance**

Along with the development of the intelligent, financial risks is more and more big. Huge amounts of unstructured data increase the difficulty of data using. Because a lot of data is not the central bank credit, the cost is low. The presence of these elements, make smart financial risks to increase obviously. To reduce the risk of smart financial, first of all, central Banks should take relevant measures to strengthen the supervision of financial institutions. Secondly, other relevant regulators should also be paid by smart, intelligent, smart marketing and service of intelligent cast of risk control. Intelligent, smart and intelligent data for research relate, d links such as strengthening the supervision. The financial institution itself should also be in the process of carry out intelligent financial alert, preventing all kinds of risks and spreading.

##### **4.3. Cultivate and Introduce High-Tech Compound Talents**

To improve the technical level of employees in financial institutions, the means of internal training and introduction is very important. Through special lectures, employees to enterprises or universities for further study, internal communication and other ways, to improve the computer level and technical ability of internal staff. Financial institutions can also introduce talents with both computer literacy and financial expertise to financial institutions through recruitment and external introduction of high-level talents, so as to ensure the steady development of intelligent finance [5]. A talent training plan has been launched to focus on the demand for talents in emerging industries such as artificial intelligence and digital creativity. Aiming at high-end talents, talents with master's degree or doctor's degree or above, as well as high-end technical talents, we will step up efforts to introduce them and improve the overall quality of employees in financial institutions.

##### **4.4. Strengthen the Implementation of the Block Chain Financial Core Technology**

With the development and progress of science and technology, new technologies represented by block chain have been extended to digital finance and other fields. Block chain technology as an emerging technology in the world are being actively promote each country, and has shown in the run-up, city of wisdom, and serve the society economic development in the areas of advantage, financial institutions should continue to deepen reform and activate the internal innovation, vigorously develop block chain technology, core technology, using block chain service in institutions such as Banks,

securities, insurance and trust. We will improve the processes of the block chain fund side, secondary suppliers, primary suppliers, core enterprises, primary dealers and warehouses, so as to make the storage and operation on the data chain reliable and feasible.

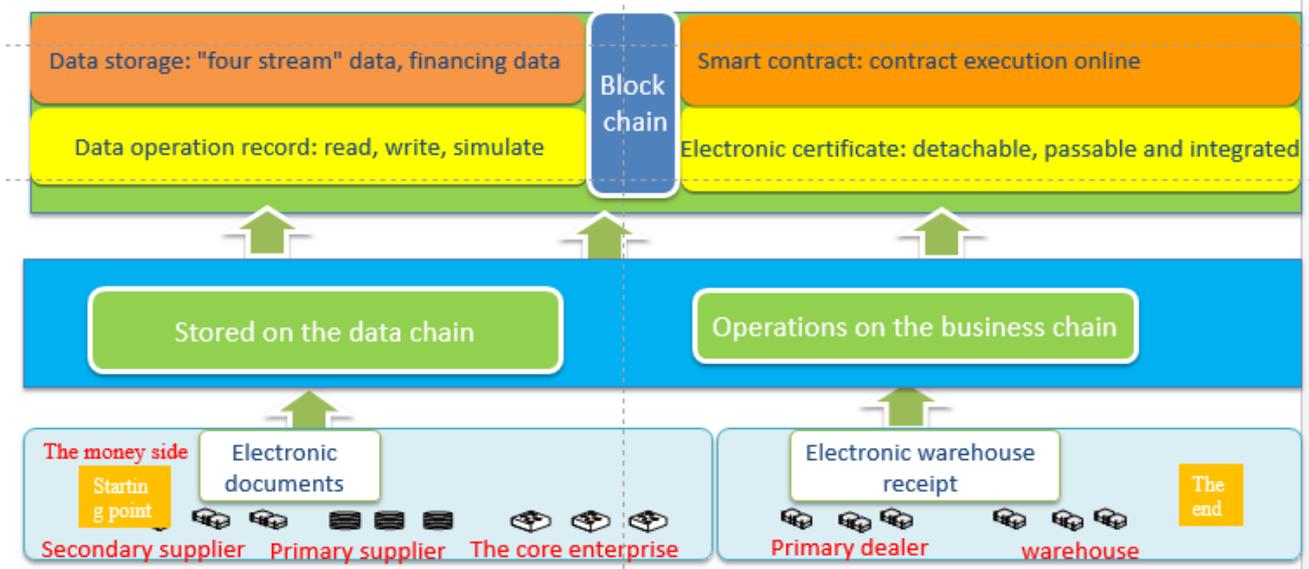


Figure2 Block chain core technology scheme

## 5. Conclusion

Big financial data and intelligence has made certain achievements, but there are a lot of bottleneck of restricting its development. Financial institutions should use technology on the depth of data mining and processing to set up the scene and the building model. Financial institutions should reduce the cost of financial services and improve the efficiency of financial services. Eventually, financial technology was applied to the business scenario and created wealth for the society. The development of any emerging thing is faced with opportunities and challenges. As emerging technologies, big data and intelligent finance will also experience many twists and turns on their growth path. Financial institutions should overcome various problems and difficulties, dare to innovate, and share the high-quality development path of the financial industry in the new era.

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