# An AI-Driven FinTech Intelligent System for Enhancing SME Value Growth

**Xin Cui**

*Kyrgyz State University named after Ishenaly Arabaev, 720000, Bishkek, the Kyrgyz Republic*

*Abstract:* Against the backdrop of accelerating digital transformation of global financial services, artificial intelligence (AI) is becoming increasingly important, and it is slowly becoming a core driver of fintech innovation, as well as growing the value of small and medium-sized enterprises (SMEs). This article is dedicated to talking about how AI technology and fintech can be deeply combined to create intelligent systems that can help SMEs break through financing barriers, improve operational efficiency, and realise systemic changes in the path of value creation. By comprehensively and meticulously combing the latest trends in the application of AI in the field of financial services globally, this article finds that AI tools such as predictive analytics, intelligent customer service, and fraud detection are playing a big role. They are like a 'scalpel', little by little reshaping the financial services process. So customers have a better experience when receiving financial services, and financial institutions themselves have become more resilient in their operations, able to respond to a variety of situations more flexibly. Mobile payment, blockchain, P2P lending, these innovations in fintech, are also bringing new changes to financial services. Combined with the actual practices of some representative enterprises, this article builds an AI value-driven model from the perspective of the three dimensions of 'labour-capital-finance'. Key factors such as R&D investment intensity, talent structure optimisation, and operational transformation efficiency are the key ways for fintech companies to achieve a significant increase in enterprise value with the help of AI technology. The study concludes that creating an AI-powered smart financial ecosystem can make it easier for SMEs to get credit facilities and their access to market resources stronger; it also helps them to grow steadily in such a complex digital environment nowadays, and even go global to expand their business. The article concludes with suggestions for supporting strategies such as regulatory policies, digital infrastructure construction and SME digital literacy enhancement, in the hope of building a new financial development that is more inclusive, resilient, and exceptionally smart.

## 1. Introduction

In various parts of the world, artificial intelligence and financial technology are closely integrated, as if giving the financial service system a 'makeover'. Especially in the post epidemic era, the development of the digital economy has pushed AI technology to all corners of the financial scene, AI technology in the form of predictive analytics, natural language processing, machine learning, and these forms, widely integrated into the financial business, giving rise to a lot of intelligent and automated financial service model. This change allows financial institutions to improve efficiency and customer experience. More importantly, it has provided SMEs with technical solutions and systematic support to solve the long-standing problem of 'difficult and expensive financing'.

SMEs, as an important market entity that promotes economic growth, employment and innovation, determine to a large extent whether the national economy can withstand the wind and waves, and whether it can continue to develop in a healthy manner. However, it is difficult for the traditional financial system to provide efficient and affordable financial services to SMEs. Against this background, AI-driven fintech has emerged, which has brought radical changes to SMEs with the help of cutting-edge technologies such as big data analysis, intelligent risk control, virtual assistants and blockchain. On the one hand, AI has reshaped the credit approval and risk pricing mechanism, so that 'non-standard customers' can also be qualified for financing through multi-dimensional indicators such as transaction behaviour and social data; on the other hand, intelligent financial tools, digital payment systems and intelligent investment advisory services based on the cloud platform have further improved the operational efficiency and financial transparency of SMEs. transparency.

Domestic enterprises engaged in financial technology have seen significant value enhancement with the help of AI technology. Since the introduction of AI technology, a number of headline enterprises in the industry have achieved a qualitative leap in terms of product structure and R&D investment. They have also formed a 'R & D investment - talent pool - operational efficiency' value creation closed loop, the three cooperate with each other to promote the continuous development of the enterprise. This development path fully demonstrates that AI is not just a mere technological innovation, but also a source of strategic transformation and value reconstruction for enterprises. Although the combination of AI and fintech together has a bright future, but in the real implementation of small and medium-sized enterprises here, or will encounter a lot of difficulties. Want to create an AI as the core, fintech as the backing, small and medium-sized enterprises as the main service object of the intelligent financial system, relying solely on the enterprise's own efforts and technology to promote can be insufficient, but also the need for policy support, ecological synergies and mechanism to ensure.

In this paper, we will systematically sort out the role of AI-driven FinTech in the value growth of SMEs, refer to the existing research results at home and abroad, and build an intelligent system model of 'AI+FinTech+SME'. Combined with the actual cases of some typical enterprises, the paper will analyse the factors that drive the value growth of enterprises, and finally put forward some strategic recommendations, with the goal of building a financial ecosystem that is not only inclusive and intelligent, but also particularly resilient.

## 2. Related Work

With the continuous advancement of artificial intelligence (AI) and machine learning (ML) technologies, an increasing number of industries are being deeply influenced by these innovations, playing a pivotal role in driving sectoral progress. From the perspective of industrial integration,

Zhang C reviewed the current state of AI, offering valuable insights and guidance for future research and practical applications. Xu Y provided an in-depth analysis of how AI and ML are profoundly impacting various fields of fundamental science, summarizing the application landscape and associated challenges, and pointing out promising directions for the integration of AI and scientific discovery.

However, as AI technologies rapidly evolve, issues such as data quality, privacy, and algorithmic bias have become central challenges. Aldoseri A systematically examined these challenges in his research and proposed strategies to address them, contributing novel perspectives to the field of AI data governance. Pallathadka H demonstrated that AI and ML have significantly reshaped both e-commerce and the financial sector, playing a crucial role in achieving a dynamic balance between revenue growth and cost control.

In the field of FinTech, Broby D developed an analytical framework for banking business models in the digital age, revealing the transformative impact of FinTech on traditional financial intermediation. He proposed four major transformation pathways and emphasized that trust mechanisms and liquidity transformation remain the essential core of future banking. Abad-Segura E, using bibliometric analysis, mapped the evolution of global FinTech research from 1975 to 2019, identifying seven key themes and offering empirical evidence to support strategic decision-making in FinTech.

In the domain of corporate value growth, Šarlija N explored capital formation and value enhancement under strategic management, proposing an evaluation method based on capital quality to assess enterprise growth pathways. Smyrnov Y compared three financial-metric-based growth prediction models, validating the effectiveness of financial indicators as proxy variables for growth and underscoring the significance of different measurement standards in shaping research outcomes and model selection.

Regarding intelligent systems and human–machine collaboration, Dellermann D was the first to propose a hybrid intelligence framework for human–machine teaming. By constructing a classification system for human roles in ML workflows, he provided design dimensions and implementation guidelines for developing composite intelligent systems that combine human reasoning with machine efficiency. Meanwhile, Banizi A H T used intelligent systems to analyze data from Iranian listed companies, finding that most firms faced operational challenges under rising costs and sanctions, thereby demonstrating the effectiveness of AI-based risk control systems in early warning applications.

Together, these studies form a solid theoretical and practical foundation for the present research on AI-driven FinTech intelligent systems that support SME value growth. In particular, they provide valuable insights into FinTech applications, intelligent system design, data governance, and risk control strategies, showcasing the immense potential of AI in improving enterprise operational efficiency and driving industry-wide transformation.

## 3.AI-Driven Intelligent Financial System Architecture

### 3.1 System Functional Modules and Technological Pathways

With the continuous advancement of AI-driven intelligent financial systems, the global FinTech landscape has been developing rapidly. Investment levels have steadily increased, providing strong capital support for the implementation of AI technologies. As shown in Figure 1, global FinTech investment has exhibited an exponential growth trend since 2010. At the same time, as illustrated in Figure 2, emerging market countries lead the world in FinTech adoption rates, creating a favorable foundation for the promotion of intelligent financial systems among small and medium-sized

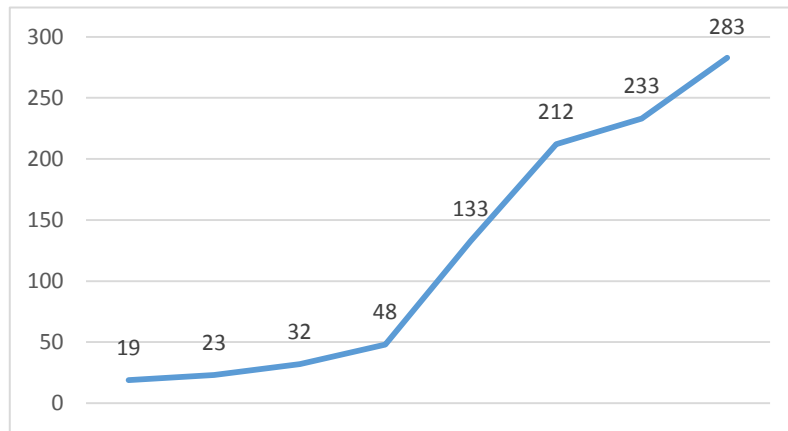enterprises (SMEs).(Data source: Compiled by the author based on CNBR)



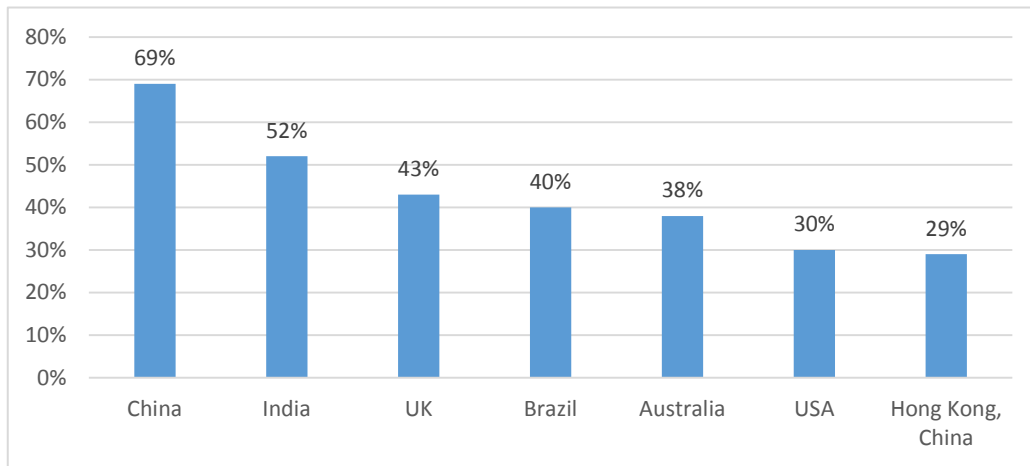*Figure 1: Global FinTech Investment Trends*



*Figure 2: Overview of FinTech Adoption Rates by Country*

The intelligent financial system designed for small and medium-sized enterprises (SMEs) is a vital outcome of the convergence between artificial intelligence (AI) and financial technology (FinTech). Its core objective is to overcome the limitations of traditional financial services through technological empowerment, creating a digital platform that integrates intelligent lending, automated financial operations, risk management, and customer service. The system is structured around the real-world needs of SMEs in financing, management, and market expansion, with the aim of improving credit accessibility and operational efficiency.

In terms of credit, the system builds a credit assessment model based on alternative data with the help of artificial intelligence, and through deep learning algorithms, it integrates the enterprise's transaction flow, supply chain relationship and social behaviour, which are all multi-faceted data. This enables real-time discovery of the possible risks of the financing enterprise and accurately determines the loan amount for the enterprise. Compared with the traditional credit model, the new mechanism can take care of those long-tail SMEs with incomplete credit records and a lack of collateral, so that they can get financing smoothly and truly realise 'data-driven financing'. In terms of financial operations, the system incorporates natural language processing and robotic process automation technologies. These technologies enable account processing, invoice management, and

cash flow analysis to be done intelligently and automatically, greatly reducing the enterprise's labour costs. The system can also provide support for budgeting, tax planning, and business decision-making through intelligent analysis, allowing businesses to operate more smoothly. Customer service is supported by conversational AI and knowledge graph. The combination of these two technologies can provide enterprises with 24/7 service response, and can also recommend personalised financial products according to the needs of enterprises. Enterprises can complete business consulting and other operations on their own, making service coverage broader and improving response speed. In order to ensure the financial stability of enterprises and system security, the platform also adds risk monitoring and early warning module. This module can keep an eye on the enterprise's data in real time, and dynamically perceive the enterprise's operation status with anomaly recognition algorithm. To provide financial institutions with timely intervention basis, so that the risk can be nipped in the bud.

To make this system run smoothly and efficiently, it relies on a complete set of technical architecture. The system takes the cloud computing platform as the 'foundation', and splits each functional module into micro-services. In this way, even if there are more and more users in the future, the system can still respond quickly and the service will not be interrupted. In terms of algorithm, the system combines the traditional scorecard model with modern machine learning technology. The system can make decisions based on a large amount of data, realising the transformation from rule-driven to data-driven. The system also introduces model compression and automatic parameter tuning mechanism to make the intelligent engine more efficient in calculations during high-frequency calls and to ensure that the intelligent engine can run stably in various situations. In order to integrate data from different places to play a role, the system has built a unified data centre. This data platform will process data collected from government, banks, e-commerce, and tax channels in accordance with unified standards, so that the data used in modelling will be complete and reliable. In terms of data security and compliance, the system strictly adheres to data privacy regulations, with access control, desensitisation mechanisms and log tracking functions, and blockchain technology has been introduced for some key data transactions, so that where the data comes from and where it passes through can be clearly traced, and the data can't be easily tampered with to improve security.

Overall, the AI-driven smart financial system is technologically advanced and also fits the actual situation of the financial industry, with great potential for commercial application. This system uses intelligent algorithms to recreate the risk pricing mechanism, making risk assessment and pricing more scientific and reasonable. It also greatly improves the coverage of services to SMEs by linking data from various channels so that information can be better shared. Finally, the system can also continuously adjust and improve itself according to changes in the market, allowing the platform to adapt to the market in the long term.

## 3.2 Logic of Enterprise Value Creation and Indicator System

AI-powered smart financial systems have revolutionised the way financial services are delivered to users in terms of technology, and have also profoundly changed the way SMEs create value internally. In the past, traditional enterprises wanted to grow in value by expanding their resources and seizing opportunities in the market. Now in the digital age, it is more important to look at the ability to configure intelligence based on data and algorithms. Artificial intelligence can facilitate business financing, it helps companies get higher quality financing services in a shorter period of time. This improves the efficiency of enterprises with resources. Enterprises can also rely on the data-driven management model, from the crude growth of 'reckless and blind expansion' to the

structural optimisation of 'careful calculation and rational layout'.

From the perspective of enterprise value theory, small and medium-sized enterprises want to achieve value growth, can be analysed from the three aspects of labour, capital and finance. the addition of AI technology to change the structure of labour factors. Especially in those positions that require high-quality talents and are driven by knowledge, AI's guiding role is obvious, improving the efficiency and innovation of these positions. On the capital side, intelligent systems can help enterprises better plan their R&D investment, allowing for more output and more efficient use of capital. So that all the intangible assets of the enterprise can be better accumulated and improved. On the financial side, AI makes the operation of enterprises clear at a glance and more manageable. Enterprises can be more accurate in making revenue forecasts, controlling costs, and converting profits into actual earnings. Enterprises can then continue to tap the growth potential from within and develop more robustly. Based on the three value-driven aspects of labour, capital and finance mentioned earlier, this paper also builds an indicator system specifically for AI-assisted SME value growth, as shown in Figure 3. This system contains core indicators for the three major aspects of labour, capital and finance.
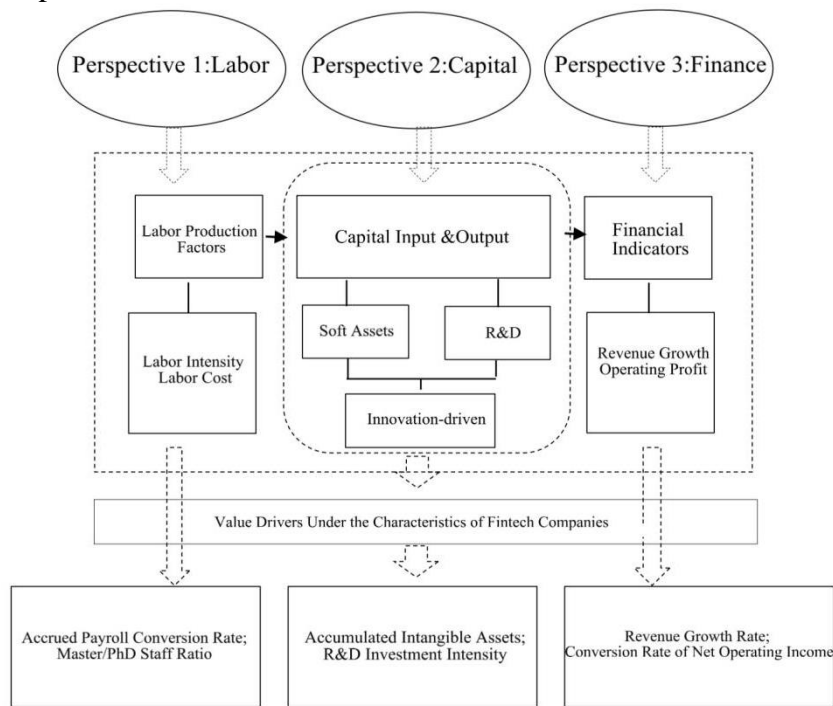


*Figure 3: AI-Driven SME Value Growth Model Based on Three Dimensions*

In addition it is important to create a new system of metrics that are appropriate for SME value creation in the AI financial system environment. This system incorporates a series of variables that reflect the path of AI in action to comprehensively measure the value creation of SMEs in the AI financial system. For example, the intensity of R&D investment can be used to see how the enterprise intends to allocate innovation resources, whether it attaches more importance to innovation or is relatively conservative; the proportion of master's and doctoral degree holders can reflect the situation of highly educated talents in the enterprise, which is an important support for the intelligent development of the enterprise; and the conversion rate of cash flow from operating activities, which reflects the efficiency of the intelligent system in the allocation of resources and the eventual impact of the allocation on the operating results of the enterprise. Cash flow conversion

rate of operating activities, which can reflect the efficiency of the intelligent system in deploying resources, and the ultimate impact of deployment on the operating results of enterprises. In addition, the revenue growth rate and customer retention rate are operational indicators that can be used as barometers of the performance of the intelligent system in the external market, reflecting the degree of intelligence of the system. Let's integrate and analyse data from different dimensions and levels to dynamically understand how much intelligent systems are driving enterprise value. We can establish a complete development chain from 'technology investment' to 'enterprise behaviour change' to 'enterprise value release'.

The key is that this set of index system has a very powerful forward-looking management effect. With the AI system, real-time data feedback and future prediction, enterprises can identify structural problems in their operations and adjust their strategic direction. In addition, financial institutions can also refer to this indicator system. They can adjust the credit policy for enterprises, as well as risk pricing models. They can provide dynamic financing support to enterprises and make their financing smoother.

This reconstruction of the way of value creation and promotion turns the AI financial system into a value synergy system that is deeply embedded in the operation of the enterprise and can be adjusted with constant feedback. In a market environment full of uncertainty, SMEs are like being injected with a cardiotonic agent, and their resilience and potential are effectively stimulated.

## 4.Intelligent System Application Scenarios and Implementation Pathways

## 4.1 Analysis of Representative Application Scenarios

The AI-powered smart financial system is super adaptable and particularly effective when it comes to helping small and medium-sized enterprises (SMEs) with their various operations. The system can deeply analyse the behavioural data of daily operations and provide real-time feedback. With this, it can identify the problems of the enterprise and realise the value of the closed loop from 'problem identification' to 'intelligent decision-making'.

When providing financing services to small and medium-sized enterprises, the intelligent system makes the credit status of enterprises clear at a glance. It collects and processes data from various transaction records, supply chain performance and other aspects of the enterprise. Based on this data, the system establishes a set of credit evaluation methods based on alternative credit. This wind control mechanism, which uses data as a 'signal light' and 'intelligence station', enables financial services to cover more enterprises that might otherwise be overlooked; on the other hand, it is also more forward-looking in identifying risks and can be flexibly adjusted according to the actual situation. With the help of dynamic risk pricing models, financial institutions are able to adjust their credit limits and loan interest rates at any time according to the different stages of the enterprise's operations, as well as changes in the market. The funds matched to the enterprise will be more flexible and better able to meet the needs of the enterprise. In the daily operation of the enterprise, the intelligent system, with the help of automated financial tools, real-time cash flow monitoring, and intelligent budgeting algorithms, helps the enterprise to build a transparent, efficient, and flexible internal management system. The system can link data from key areas such as purchasing, inventory, invoicing, and tax liability, as well as make predictive analyses. So the enterprise management is no longer only rely on experience, but driven by real data. For those small and micro-enterprises with tighter resource allocation, this mechanism can avoid the emergence of information flow within the enterprise, each managing its own 'information silo' situation, but also to prevent the waste of resources. The enterprise funds are used more efficiently and the reaction is faster when making decisions.

In terms of market development and customer management, the system will integrate the user's transaction records, geographical preferences, historical activity, and automatically 'draw a picture' of each customer, and then match the appropriate marketing approach based on the picture. In this way, the success rate of SMEs in attracting customers to place orders has increased, and old customers can be retained. With tools such as AI recommendation engines, intelligent customer service and data analytics panels, companies can more accurately find their target customer groups and push personalised content to different customers.

In cross-border e-commerce and digital marketing, which are newly emerged business models, SMEs rely on this system to build a multi-channel approach to reach out to customers, reach out to more customers, break through the limitations of the original market, and break into a new world in the digital world.

The AI Intelligent Financial System is not like the tools used in the past to solve individual problems, but is more like a systematic platform that is integrated into the daily operation of SMEs in an all-round way. The system can flexibly combine various functions and is highly adaptable to the needs of enterprises. It connects the entrance of enterprise financing, the middle stage of daily operation and management, and the front end of market development to achieve intelligent integrated operation. With this system, SMEs have a digital 'bridge' that organically connects external financial resources and internal management capabilities, allowing for smoother business development.

## 4.2 Deployment Strategies and Policy Recommendations

The potential and value of the AI intelligent financial system has been initially tested in so many business scenarios, and there are still a number of real challenges to be encountered if we want to promote this system on a large scale. The technical requirements of the system are relatively high, which cannot be easily mastered by just any enterprise; the high technical threshold, the remaining data barriers, the lack of digital literacy of enterprises, and the multiple concerns about compliance and security, all these factors combined have resulted in the intelligent system not being rolled out fast enough and covering a wide range of areas, and far from achieving the desired results. If we want intelligent systems to move from the current pilot stage to full popularity, we need to let policy makers, market participants and technology development entities work together to build a promotion mechanism for sustainable development.

In terms of technological adaptation, system design should evolve toward lightweight and modular architectures to reduce cognitive and financial barriers for SMEs. Standardized service versions based on cloud platforms should be offered, supporting on-demand activation, low-cost subscriptions, and rapid iteration, enabling resource-constrained enterprises to access core functionalities with minimal investment. Supporting features, such as industry-specific templates and data integration plugins, should be flexible and scalable to accommodate diverse organizational structures and business processes.

At the organizational level, it is necessary to establish a government-led, multi-stakeholder ecosystem for intelligent financial support. Effective coupling of public data integration, financial institutions' risk assessment capabilities, and technology platforms' system development expertise can foster a closed-loop "finance–data–application" structure tailored to SMEs. Governments can take the lead in establishing regional FinTech service platforms, promoting the integration of multi-source data—such as taxation, credit reporting, business registration, and social security—to provide stable, high-quality foundational support for system operation. With assistance from intelligent systems, financial institutions can incorporate "visible and quantifiable" SMEs into their

service radius, thereby reducing credit evaluation costs and improving service coverage.

On the policy front, both incentive mechanisms and regulatory frameworks must be strengthened. On one hand, fiscal subsidies, tax relief, and first-time-use support should be leveraged to encourage SMEs to adopt intelligent systems and enhance their willingness to use such technologies. On the other hand, regulatory frameworks concerning data security and algorithmic transparency must be established, delineating the boundaries of algorithmic accountability and preventing misuse of technology and information risks. This is essential for building a foundation of trust among enterprises and end-users. Furthermore, to address the digital capability gap among SMEs, local bureaus of industry and information technology, labor departments, and trade associations should organize regular digital finance training programs, practical simulations, and case reviews to equip SME executives and key staff with the competencies needed to interact effectively with intelligent systems.

Whether AI-driven intelligent financial systems can truly generate value for SMEs depends not solely on the technology itself but on whether institutional mechanisms can "remove barriers and inject vitality." Through the synergistic integration of multi-stakeholder coordination, targeted policy tools, and market-oriented implementation pathways, the deployment of intelligent systems can evolve from isolated breakthroughs to widespread penetration, ongoing optimization, and a virtuous cycle. This is not only essential for driving the digital transformation of SMEs, but also a strategic cornerstone for reconstructing the financial services ecosystem and building a high-quality development paradigm.

## 5. Conclusion and Outlook

With the deep integration of artificial intelligence and financial technology, a new type of intelligent financial service system for small and medium-sized enterprises (SMEs) is gradually taking shape. This paper studies the topic of 'how AI fintech helps SMEs realise intelligent upgrading', focusing on system design, value creation, application scenarios and promotion methods. It is found that AI has been upgraded from a financial support tool to a decision-making core, which can provide SMEs with all-round support from financing to operation to market expansion through big data analysis and intelligent prediction.

This intelligent financial system closely integrates cloud computing, AI algorithms and the actual needs of enterprises, which significantly improves SMEs' risk management ability, financial efficiency and market competitiveness. For SMEs with limited resources and fragmented data, this system can not only make up for technical shortcomings, but also become a key booster for leapfrog development. However, the technology does not mean that all enterprises can use it well. SMEs in the use of the process will also encounter technical matching, data integration, policy support and other issues. In order to make the system really work, it is necessary for the government, banks, technology companies and SMEs to co-operate to build a benign ecology of policy support, service support and data sharing.

In the future, the AI financial system will develop in two directions: first, the algorithm will become smarter, safer and more transparent; second, the scope of services will be expanded from financing to more areas such as strategic planning, personnel management, customer operations, etc., and will become an intelligent assistant for the whole life cycle of enterprises. With the continuous maturity of technology and the improvement of supporting policies, this kind of intelligent system is expected to become the standard for SMEs, helping them to go from 'survival' to 'development', and to achieve sustained growth in the digital era.

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